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GENERAL CATALOGUE

FRUIT AND ORNAMENTAL TREES

SHRUBS, VINES ROSES, PLANTS

Spray Calendar and Formulas

ELMER SHERWOOD
NURSERYMAN
ODESSA, N. Y.

Illustrated Descriptive Catalogue of

ORNAMENTAL TREES

FRUIT, SHRUBS and PLANTS

Together with Valuable Hints on the Selection, Propagation and Care of Stock and Spray Calendar and Formulas

PRESS OF W. F. HUMPHREY, GENEVA, N. Y.

INTRODUCTION.

We take pleasure in presenting this carefully revised edition of our Descriptive Catalogue. It has been improved by the addition of new and promising sorts and by the omission of those which experience has proved to be unworthy for general cultivation.

For first-class nursery stock, there are three essentials: First, honest labelling; second, health, vigor, and maturity; and third, careful packing and shipping. We give special attention to the propagation of varieties that will come true to name, endeavoring to protect ourselves and our customers from error and imposition. We feel safe, therefore, in offering our stock as being what it is represented to be. All packing and shipping is given personal supervision and, still further to protect our patrons against loss, only skilled and competent men are employed.

Our lands are well adapted to the growing of the varieties handled by us and this fact together with thorough cultivation and care makes for health, vigor, and maturity in all that we grow.

Before setting out any nursery stock careful reading of pages 43 to 48 of this catalogue will be of benefit. It is well to understand that nursery stock is perishable and demands careful attention after being received from the nursery. Persons who handle nursery stock intelligently seldom have any cause for complaint. We request you to read the directions on "Transplanting Trees and Shrubs."

SHROPSHIRE DAMSON PLUM

FRUIT DEPARTMENT.

APPLES.

Our list embraces a most careful selection of the best sorts for the several seasons, and few, if any, are omitted, that have proved worthy of general culture.

SUMMER APPLES.

Astrachan Red—Large, deep crimson, juicy; rich, acid; August.

Benoni—Medium, deep red; tender, sub-acid flavor. August.

Caroline Red June—Medium; deep red; flesh tender, juicy, sub-acid flavor. Tree vigorous, upright, an early and abundant bearer. August.

Early Harvest—Medium size, straw color; tender, sub-acid. August.

Early Strawberry—Medium; roundish; finely striped and stained with deep red; flesh white, slightly tinged with red next the skin, tender, sub-acid, with an agreeable aroma. Tree a moderate, erect grower, and a good bearer. Middle to end of August.

Golden Sweet—Large; pale yellow; very sweet and good. August.

Sweet Bough—Large; pale yellow; tender and sweet. August.

Tetofsky—A small Russian apple, medium size, yellow striped with crimson, sprightly acid. Suitable for culinary use. Tree hardy, upright, and early bearer. Late July to early September.

Yellow Transparent—Very early; color, pale yellow. July and August.

AUTUMN VARIETIES.

Alexander—Large, uniform; mild sub-acid. Tree upright, vigorous. Sept.

Duchess of Oldenburg—Medium size; yellow, streaked with red; juicy, with rich, sub-acid flavor. September.

Fall Pippin—Large, yellow; tender juicy and rich. October.

Fameuse—(Snow Apple)—Medium deep crimson. Very handsome; flesh snowy white, tender, melting, juicy. November.

Fanny—An attractive red apple of dessert quality. Tree vigorous and rather early bearer; reliable annual cropper. Fruit beautiful and mild sub-acid flavor. September to November.

Golden Pippin—An apple of large size and coarse grained; flavor very pleasant. It is a reliable cropper and good for commercial purposes but is passing out of general use.

Golden Russet—Medium, roundish, ovate, dull russet, with a tinge of red on the sunny side; flesh greenish, crisp, juicy and high flavored; tree vigorous, very hardy, a good bearer. November to April.

Gravenstein—Large, striped; tender, juicy and high flavored. September.

Hubbardston Nonsuch—Large, striped yellow and red; tender, juicy. An excellent variety for commercial planting, being one of the most profitable of the varieties of its season. October.

Jersey Sweet—Striped red and green; very sweet. September and October.

Jonathan—Medium size; red and yellow; flesh tender, juicy and rich; a moderate grower; shoots light-colored, slender and spreading; very productive. One of the best varieties either for table or market. November to March.

Lady Sweet—Large, round, green and red striped, with a thin white bloom; very rich, sweet, and agreeably perfumed one of the best sweet winter apples. Shoots rather slender but erect; very productive. December to April.

Maiden's Blush—Medium size; pale yellow, with beautiful red cheek. September and October.

McIntosh Red—Medium size; nearly covered with dark red; flesh white, fine, very tender, juicy. December.

Pound Sweet—Very large; roundish; skin smooth, pale green, becoming yellow next to the sun; flesh white, very sweet, rich, tender. Very valuable for baking. Tree vigorous, great bearer. September to December.

Twenty Ounce (Cayuga Red Streak)—Very large; nearly round; yellow, striped with red; of fair quality; tree a vigorous, spreading grower, and a fine bearer. Excellent for baking. Very popular in the markets. October to January.

Wealthy—Medium; yellow, mostly covered with dark red; flesh white, subacid, one of the best. November.

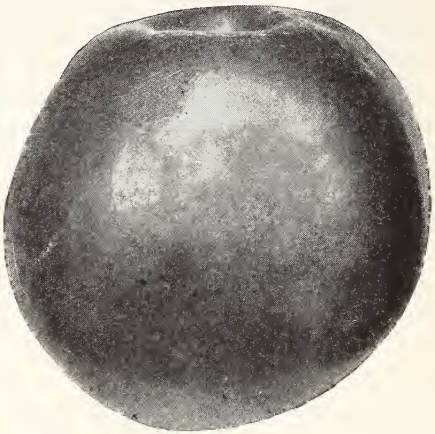
TWENTY OUNCE (reduced).

Wolf River—A variety that has largely superseded Alexander in many localities. Tree a strong spreading grower, not an early bearer, productive in alternate years. Fruit is large, highly colored and of fine flavor. September to December.

WINTER.

Akin—A beautiful dark red, winter apple of good quality. Tree upright and moderately productive. January to June.

Baldwin—Large, bright red; juicy, crisp, sub-acid. One of the most popular winter apples. January to April.



GANO (reduced).

Banana Sweet—A sweet winter apple. Fruit attractive, greenish yellow, blushed. Should not be confused with Winter Banana. January to March.

Barry—Fruit resembles the Greening. Will prove valuable for commercial orchards. Late.

Ben Davis—A leading commercial variety. Tree hardy, healthy, vigorous. Fruit large, handsomely colored, attractive. At its best in Virginia, Kentucky, Tennessee, Illinois, Missouri, Arkansas and portions of adjoining states. January to June.

Black Ben Davis—Brilliant in color, attractive in appearance, deep red. Good keeper. Tree vigorous. January to April.

Black Gilliflower—Very deep red bordering on black. In some demand in the south. Not recommended for general planting. October to January.

Boiken—Attractive bright yellow apple with beautiful blush. Valuable for commercial orchards. Tree hardy and productive. Flavor brisk, sub-acid. Bears young and good reliable cropper. Healthy. November to February.

Bottle Greening—Tree healthy and productive. Fruit fairly attractive, easily bruised. Not altogether satisfactory for commercial orchards. October to March.

Buckingham—Valuable in Southern states. Fruit yellow, flesh moderately firm yet tender. Tree moderate grower. Flavor mild, subacid, good. November to April.

Gano—A variety of the Ben Davis type. Fruit medium to large, light yellow in color and of good flesh and flavor. Season about the same as Ben Davis.

Canada Baldwin—Resembles Fameuse rather than the Baldwin. Tree moderately productive; fruit highly attractive. Recommended only for those regions where a hardy variety of Fameuse type is desired to extend the Fameuse season. November to January.

Cannon—Valued in the South. Long keeping apple of fair quality. Tree healthy and vigorous. Fruit greenish yellow splashed with red. January to April.

Champion (Collins)—An Arkansas variety. Tree a good grower, hardy, productive. Fruit attractive, yellow tinged with red. January to June.

Clayton—Grown in the Ozark region of Missouri. Tree hardy, good grower, fairly productive. Fruit yellow blushed. Flesh tender and firm. May or June.

Doctor (Newby, Coon Red)—Fruit attractive, good color, of desirable size and shape. Inferior to Baldwin. Dec. to Apr.

Dutch Mignonne—A good apple for the home orchard. Tree vigorous and productive. Fruit not attractive but good for dessert and culinary purposes. Season extending to May.

English Russet—Good for dessert purposes and cider. A good keeper. Fruit not attractive. January to May.

Fallawater—Very large, globular; yellowish green, dull red cheek; juicy, crisp, pleasant sub-acid flavor. December.

Gilliflower—See Black Gilliflower.

Grimes' Golden—Medium to large; cylindrical; golden yellow, sprinkled with gray dots; flesh crisp, tender, juicy, sprightly; very good to best. Tree hardy, vigorous, productive, bears early. January to April.

Ingram—A fine apple for the Southwest. Fruit large and nearly red. Flesh crisp, tender and of fine flavor. February to June.

King (Tompkins County)—Largest size; oblate, yellowish ground striped and covered with bright red; fragrant, spicy smelling; flesh very crisp, tender, rich, fine flavor, sub-acid; vigorous, productive in certain localities; hardy. A superb apple. November to April.

Kinnaird—A dark red apple of the Winesap class. Popular in Tennessee and the middle west.

Lady—A strikingly beautiful little apple for dessert purposes. Delicate flavor. December to May.

Missouri—A popular market apple of the middle west Tree short lived but early and heavy cropper. Oct. to Jan.

Newtown, Green and Yellow—These are so much alike that it is often impossible to tell one from the other. They are reliable croppers, come into bearing early but subject to scab. Fruit medium to large, greenish in color and of fine flavor. A good commercial apple for home and foreign markets. January to May.

Newton Pippin (Albemarle Pippin)—Medium to large, roundish, yellow; very firm, crisp, juicy, with a highly delicious sub-acid flavor; tree a very slow, feeble grower, and not adapted to Western New York and New England; must be top grafted, highly fertilized and well cared for. Has attained its greatest perfection on Long Island and in the Hudson Valley. One of the most famous American apples. A very late keeper. November to June.

Nickajack—A popular apple in the South and Southwest. It has a great many synonyms such as Aberdeen, Howard, Red Pippin, etc. Tree large and vigorous. Fruit medium to large, orange-red in color and of mildly subacid flavor. December to May.

Northern Spy—Large; striped; tender, with a mild sub-acid, rich and delicious flavor. January to March.

Northwestern Greening—An attractive apple of green or yellowish color. Popular in the northern portion of the apple belt where hardy apple is desired. Tree vigorous. Fruit large to very large with mild subacid flavor.

Peck's Pleasant—Large; pale yellow; very tender and rich.

Ralls (Jeniton)—A southern variety producing fruit of fine quality.

Rambo—A fine flavored apple for home orchards. Does not keep well for commercial purposes. Fruit medium size.

Red Canada (Steele's Red Winter)—Medium, oblate; red; flesh rich, subacid and delicious; tree a moderate and slender grower. A superior fruit for table or market. November to May.

Rhode Island Greening—Large greenish yellow; tender, juicy and rich, with rather an acid flavor. December to April.

Rome Beauty—Large; yellow and bright red; flesh yellowish, tender,

juicy, sub-acid; tree moderate grower, good bearer. December to March.

Russet, Roxbury—(Boston Russet)—Rather large; greenish-yellow, mostly covered with bright russet; a pleasant sub-acid flavor. January to June.

Seek-no-Further (Westfield)—Above medium; dull red, dotted with russet; flesh white, fine grained; rich flavor, excellent. December to February.

Senator (Oliver)—Fruit medium to large, roundish; bright red on a greenish yellow ground; distinctly dotted. Flesh yellowish white, juicy, rich, pleasant, sub-acid, with an intense apple flavor. Small core. Tree a vigorous, symmetrical grower; an early and heavy bearer. Season mid-winter.

Spitzenburg (Esopus)—Medium to large; deep red; flesh yellow, crisp, sub-acid, with a spicy and delicious flavor; tree rather slow grower, requires top working, high culture and good care, under which it forms a large spreading tree, a good bearer and deservedly a most popular variety. December to April.

Stark—Tree is thrifty, hardy, healthy, a reliable cropper and very productive. Fruit large and of a beautiful color and good flavor. Specially desirable in North, South and West outside the range of the Baldwin.

Stayman's Winesap—Large, bright red, striped; excellent quality. Flesh firm, tender, rich, juicy, mild sub-acid. A strong grower and heavy bearer. Superior to old Winesap. Succeeds in a great variety of soils. February to April.

Sutton Beauty—Medium to large, roundish; handsome, waxen yellow, shaded mottled, and obscurely striped with fine crimson; flesh white, crisp, tender, juicy, sprightly sub-acid; quality fine; late keeper; tree a vigorous grower and productive. One of the most valuable market varieties. Nov. to Feb.

Talman Sweet—Medium size; pale yellow, slightly tinged with red; firm, rich and sweet; excellent for cooking; tree vigorous, very hardy and productive. November to April.

Texas (Pride of Texas)—A late keeping Southern apple. Color yellow shaded with red. Tree a good cropper and productive. Fruit good quality and flavor.

Wagener—Medium to large; light yellow covered with deep red in the sun, firm, crisp, juicy, sub-acid; tree vigorous, upright, handsome, very productive. December to May.

Walbridge—Medium size; handsome, pale yellow, striped with red; crisp, tender, juicy, a late keeper; tree very vigorous, extremely hardy, one of the Ironclads. January to May.

Willow—A southern variety cultivated in central portion of Mississippi. Tree a strong grower and rather early and regular bearer. Quality of fruit fair.

Winter Banana—New, excellent. The name is most appropriate, as it has a delightful banana perfume. Fruit keeps well till spring; the color is a striking red blush on a deep yellow ground. It is of large size and very showy in appearance, roundish, inclining to conical, stalks three-fourths of an inch long, cavity moderate, apex shallow. Originated in Indiana.

Wine Sap—Large, roundish; deep red; medium quality; keeps well; tree a fair grower and good bearer. Dec. to May.

York Imperial—Medium; white shaded with crimson; flesh firm, crisp, juicy, pleasant, mild, sub-acid; tree vigorous, a good bearer. A popular Pennsylvania variety. November to February.

CRAB APPLES.

Excelsior—Tree a strong grower, hardy and healthy. Fruit large for a crab apple and very attractive; flavor agreeable.

Florence—Not superior to Martha but more beautiful and more prolific.

Hyslop—Almost as large as Early Strawberry Apple; deep crimson; very popular on account of its large size; beauty and hardiness. Vigorous. October to January.

Martha—A new variety; a seedling of the Duchess of Oldenburg. Resembles the Transcendent, but larger; beautiful showy fruit and bears enormously. All things considered, we doubt if it has an equal among the crabs. Vigorous. September and October.

Red Siberian—Fruit small, about an inch in diameter; yellow with scarlet cheek, beautiful. Tree an erect, free grower; bears when two or three years old. September and October.

Transcendent—Skin yellow, striped with red; flesh crisp and juicy. An early and heavy bearer. One of the best known varieties. Vigorous. Sept. and Oct.

Whitney—Large, glossy green, striped, splashed with carmine; flesh firm, juicy and flavor very pleasant; ripe latter part of August. Tree a great bearer and very hardy; a vigorous grower, with a dark green, glossy foliage. Vigorous. August.

Yellow Siberian (Golden Beauty)—Large, and of a beautiful golden yellow color. Tree vigorous. September.

PLUMS.

Abundance (Botan)—The tree is a rapid grower, healthy in limb and foliage, comes into bearing remarkably young, and yields abundantly. The fruit is full medium size, color a rich, bright cherry red; flesh light yellow, juicy and tender. Vigorous. Last of July.

Bradshaw—Large, early, purple, good quality. August.

Burbank—A valuable Japanese plum, of deeper color and ripening later in the season than the Abundance. The fruit is

BURBANK PLUM

large, nearly globular, clear cherry red with a thin lilac bloom; flesh a deep yellow, very sweet, with a peculiar and very agreeable flavor. The tree is a vigorous grower, with large and broad leaves; usually begins to bear second year after transplanting. August.

Coe's Golden Drop—Large, sweet. September.

Chabot or **Yellow Japan**—Very large; pointed, tapering gradually from a heart-shaped base; color bright red purple, on a yellow ground; very showy. Tree a good grower, blooms two weeks later than Abundance, thus escaping the spring frosts, and a most abundant bearer. Ripens a little later than Burbank. One of the best Japans.

Damson—Hardy, and an annual bearer; Fruit medium; dark copper color, with a rich bloom. Moderate. October.

German Prune—Purple, juicy, rich, fine. September.

Green Gage—Small; well liked where grown; tree a slow grower. About middle of August.

Hale—A large, handsome Japanese plum; bright orange, mottled with cherry red; flesh yellow, quality good.

Imperial Gage—Fruit large, oval, skin pale green, flesh juicy, sweet, rich and excellent. Vigorous. Middle of August.

Lombard (Bleecker's Scarlet)—Medium roundish oval; violet red; juicy, pleasant and good; adheres to the stone; productive. A valuable market variety; one of the most hardy and popular. Nearly always produces a crop. Not liable to rot. Vigorous. Middle of August.

October Purple—Reddish purple color. Flesh yellow and superb in quality. Ripens about middle of September.

Red June—An early ripening Japanese plum; medium to large, roundish, conical, purplish red, handsome; flesh yellow, quality good.

Reine Claude—Large, nearly round; pale yellow, marked with red; juicy, melting and excellent; good bearer. Not liable to rot. First of September.

Satsuma—A fine, large Japanese plum. The flesh is solid, purplish crimson color from pit to skin, juicy, fine quality. Pit very small, little larger than a cherry stone. Vigorous. September.

Shropshire Damson—A medium sized, dark purple variety; esteemed for preserving. Very productive. October.

Wickson—A Japanese Plum. The tree grows in vase form, sturdy and upright. The stone is small and the flesh is of fine texture, firm, sugary and delicious. Ripens about September 1st.

Yellow Gage. Large, yellow; juicy and rich. Productive and vigorous. August.

PEARS.

SUMMER VARIETIES.

Bartlett—Large size; buttery, very juicy and high flavored; very popular. September.

Clapp's Favorite—Large size; flesh fine grained, juicy, melting, rich and buttery, earlier than Bartlett. August.

Flemish Beauty—Large, juicy, melting, rich and fine; good bearer; hardy everywhere. Vigorous. September and October.

Koonce—Medium to large, handsome; yellow; flesh juicy, sweet, spicy, good. Ripens with the earliest. Tree a strong grower, hardy, and productive. August.

Manning's Elizabeth—Small to medium; bears in clusters; crimson and gold; rich, sugary, sprightly; productive. One of the best early pears. Vigorous. August.

Tyson—Above medium size; melting, juicy, sweet. One of the best summer varieties. August.

Wilder—Small to medium; yellow, with red cheek; handsome; sweet delicious. August.

AUTUMN AND WINTER.

Anjou—A large, handsome pear; buttery and melting, with sprightly, vinous flavor. Keeps until the winter holidays. Considered the best pear.

Bosc—A large and beautiful russety pear; very distinct, with a long neck; high flavored and delicious. September and October.

Clairgeau—Very large, tender and juicy; abundant bearer. Valuable market fruit.

Duchess d'Angouleme—Very large; of a greenish yellow, with patches of yellow and a dull red cheek. It attains its greatest perfection on the Quince root. October and November.

Garber—One of the Japan Hybrids; earlier and larger than Kieffer; hardy, productive, early bearer. September and October.

Howell—Large, light, waxen yellow, with fine red cheek; handsome, rich, sweet, melting, perfumed aromatic flavor. An early and profuse bearer. Very hardy and valuable. Vigorous. September and October.

Kieffer—Very large, bell shaped; light yellow, when fully ripe, sometimes with a slight blush; flesh white, crisp, juicy, of slightly quince flavor; of fair quality; exceedingly valuable for cooking or canning, which brings out its best spicy flavor; never rots at the core. Unsatisfactory in many sections and not recommended as against other varieties. October to December.

Louise Bonne de Jersey—Large size; very juicy and melting with a rich and excellent flavor; succeeding better on the Quince than on the Pear root. September and October.

Lawrence—Above medium size, yellow, tender and melting, quality best. Mid-Winter.

Rutter—Originated in Pennsylvania; quality fine; flavor high, sugary, juicy and vinous, size large; ripens in November.

Sheldon—Large size; roundish; greenish yellow, mostly covered with thin, light russet; very juicy, melting, sweet and vinous. October and November.

Seckel—Small size; yellowish russet, with a red cheek. The richest and finest variety known. September and October.

ANJOU PEAR.

Worden Seckel—A seedling of Seckel. Fruit medium size, borne in clusters, juicy, buttery, fine-grained, with a flavor and aroma fully equal to that of its parent, which it surpasses in size, beauty, and keeping qualities. Ripens in October, but will keep in good condition till December.

Winter Nellis—Medium size; greenish yellow, spotted with russet; melting and buttery with rich sprightly flavor. December and January.

CHERRIES.

HEART AND BIGARREAU

Black Tartarian—Very large, bright purplish black; half tender, juicy, very rich, excellent flavor; productive. Free. First to middle of July.

Gov. Wood—One of the best cherries; very large; light yellow marbled with red; juicy, rich and delicious. Tree healthy and a great bearer. Hangs well on the tree. Vigorous. Last of June.

Napoleon Bigarreau—Very large, pale yellow or red; very firm, juicy and sweet; very productive; one of the best. Vigorous. First of July.

Windsor—Fruit large; liver colored, resembling the Elkhorn, ripening a few days after that variety; flesh remarkably firm, of fine quality. Tree hardy and prolific. Vigorous. Middle of July.

Yellow Spanish—Large, pale yellow, with red cheek; firm, juicy and excellent; one of the best light colored cherries; productive. Free. Last of June.

DUKE AND MORELLO.

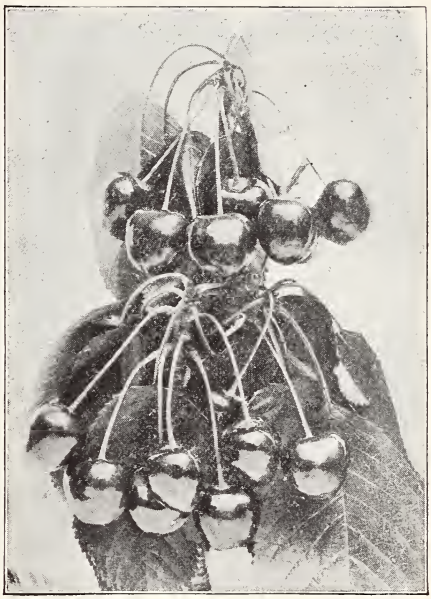
Early Richmond—Medium size; dark red; melting, juicy, sprightly, acid flavor. This is one of the most valuable and popular of the acid cherries, is unsurpassed for cooking purposes, and is exceedingly productive. Free. June.

English Morello—Medium to large; blackish red; rich, acid, juicy and good; very productive. Moderate. August.

May Duke—Large, dark red, juicy and rich; an old, excellent variety; productive. Free. Middle of June.

Montmorency—A large red, acid cherry, larger than early Richmond and fully ten days later. Very profitable. Early Richmond hangs in clusters and is more liable to rot. Free. Last of June.

BLACK TARTARIAN.



EARLY RICHMOND.

PEACHES.

Belle of Georgia—Large; skin white with red cheek; flesh white, firm and of excellent flavor. September.

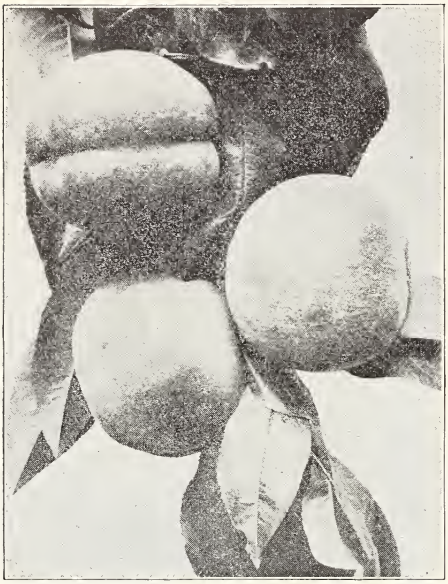
Connecticut—Large; deep yellow, with red cheek; rich, sweet and highly flavored. Ripens before Crawford's Early.

Crawford's Early—This very beautiful and best of yellow peaches is highly esteemed for market purposes. Fruit very large, oblong; skin yellow, with a fine red cheek; flesh yellow, juicy, sweet and excellent. Wonderfully productive and hardy. Freestone. Last of August.

Crawford's Late—Fruit of the largest size; skin yellow, or greenish yellow, with dull red cheek; flesh yellow; productive. One of the finest late sorts. Freestone. Last of September.

Early Rivers—Large, light straw color, with delicate pink cheek; flesh juicy and melting, with very rich flavor. Ripens about a week earlier than Hale's. Freestone. Last of August.

Elberta—A seedling of Chinese cling but entirely free. Large; yellow with red cheek, juicy and of high quality; flesh yellow and melting. A very valuable sort. Ripens after Early Crawford. Freestone.



OLDMIXON

Mountain Rose—Large; red; flesh white, juicy, rich and excellent; one of the best early peaches. Should be in every collection. Freestone. First of August.

Oldmixon—Large, pale yellow, with red cheek; tender, rich and good. September.

Stump the World—Very large, roundish; skin white, with a bright red cheek; flesh white, juicy and good. Freestone. Last of September.

APRICOTS.

AMERICAN VARIETIES.

Acme—A free and vigorous grower, exceedingly hardy and productive. Fruit of large size, yellow, with red cheek, good quality; freestone. August.

Harris—Free; hardy; comes into bearing young, and very productive. Fruit large, rich golden yellow; ripens middle of July.

Moorpark—One of the largest; orange, with a red cheek; firm, juicy, with a rich flavor; very productive. August.

RUSSIAN VARIETIES.

Alexander—Tree hardy; an immense bearer; fruit large, yellow, flecked with red; very beautiful, sweet and delicious. July.

Gibb—Tree hardy and symmetrical; a good bearer; fruit medium, yellow; sub-acid, rich, juicy, the best early variety, ripening about with strawberries; last of June.

J. L. Budd—A hardy, strong grower and profuse bearer; large, white with red cheek; sweet, juicy, extra fine, with a sweet kernel as fine flavored as the almond; the best late variety. August.

QUINCES.

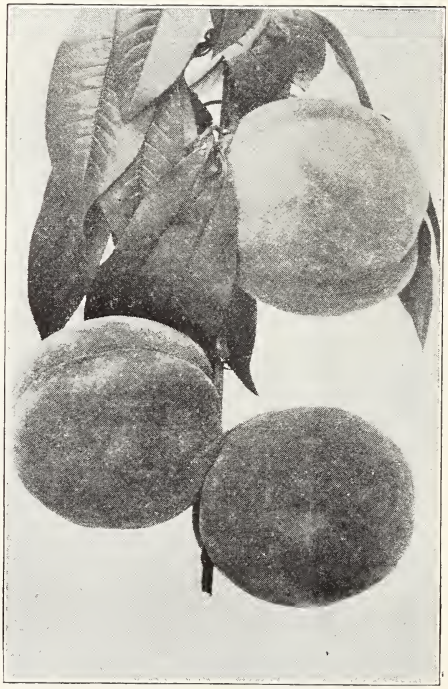
Bourgeat—Rich golden color; smooth skin, with delicious quince odor.

Missouri Mammoth—Rich and aromatic, one of the largest and handsomest. Bears young and prolifically.

Orange (Apple)—Fruit, large, round, with a short neck; color bright yellow; flesh firm and tough until cooked, when it becomes tender, juicy, and of excellent flavor.

Rea's—The largest and in every respect the finest variety of the quince.

Van Deman—A strong grower, the hardiest, surest and youngest bearer. Fruit golden, big, fine flavored. Tree productive.



ELBERTA

NECTARINES.

The Nectarine requires the same culture and management as the peach, from which it differs only in having smooth skin like the plum. It is peculiarly liable to the attacks of the curculio. We handle a few of the standard varieties.

GRAPES.

BLACK GRAPES.

Campbell's Early—Clusters large and handsome; berries large, nearly round, black, with light purple bloom; flesh rather firm, but tender; quality rich, sweet, slightly vinous; a strong and vigorous grower; it ripens very early.

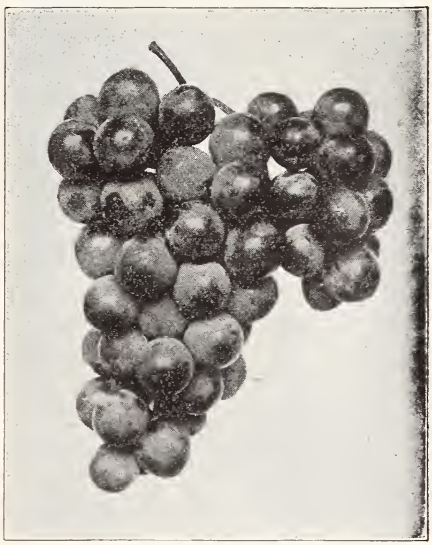
Concord—A popular variety; universally healthy, vigorous and productive; flesh somewhat buttery, moderately juicy and sweet Bunch large, nearly black with bloom; early. September.

McPike—A black grape said to be a seedling of the Worden, and to produce berries of great size. First to middle of September.

MOORE'S EARLY.

Moore's Early—Combining the vigor, health and productiveness of Concord. In quality hardly to be distinguished from it. Bunch large, berries very large, black. August.

Wilder—Large; bunches generally shouldered; berry round and large; flesh buttery, with a somewhat fibrous center; sweet, rather sprightly, black. Middle of September.



WILDER GRAPE

Worden—Bunches large, handsome, double shouldered; berries large, sweet, lively. Being ten days earlier than Concord, it ripens well in cold localities; vine very thrifty and vigorous, perfectly hardy and a good bearer. Black. Middle of September.

RED GRAPES.

Brighton—A superior family grape. Delicate skin, tender, almost seedless pulp, sugary, juicy and rich flavor. It ripens a week before the Concord.

Delaware—Bunches small, berries small; skin thin, light red; flesh very juicy, with a sweet and delicious flavor. Ripens early.

Salem—(Roger's No. 53)—Bunch large and compact; berry large, of a light chestnut color, thick skinned; very sweet and sprightly.

Vergennes—Color light amber; flavor rich and delicious. Ripens with Concord.

WHITE GRAPES.

Diamond (Moore's Diamond)—Berry about the size of Concord; flesh melting and juicy, sweet to the center. Ripens with Concord.

Green Mountain (Winchell)—Bunch long, compact. Color green or greenish white; skin thin; pulp exceedingly tender and sweet. Three weeks earlier than Concord.

Niagara—Bunches very large and uniform and very compact; berries larger than Concord; quality good; ripens before Concord.

Pocklington—Good quality; ripens at the time of the Concord.

SMALL FRUITS.

STRAWBERRIES.

Those marked (P) have pistillate or imperfect flowers, and must be planted near perfect-flowering kinds, in order that the flowers may be fertilized. The varieties not so marked are bi-sexual or perfect flowering, and can be planted alone.

Bubach (P)—Large and handsome; conical, bright scarlet, fair quality. Season early to medium.

Climax—Enormously productive, of good size, finely flavored, perfectly formed berries, ripening extremely early.

Gandy—The popular, late market berry, always commanding fancy prices.

Glen Mary—A fine, large, late berry of excellent quality.

Haverland (P)—Large, long, bright red; a great yielder.

Sample—In productiveness it is perhaps surpassed by none. The fruit is very large. Of fine quality but not the best.

Senator Dunlap—Very productive. Large, bright, or slightly dark red. Quality the very best.

Steven's Late Champion—Large, light red berries, pointed globular; regular and perfect in form; very firm and of extra high quality. An ideal plant to produce large berries and yield an enormous quantity of them. Season late.

Wm. Belt—Very large, conical; color bright red; quality very good. Season medium to late.

RASPBERRIES.

RED AND YELLOW VARIETIES.

Columbian—One of the most vigorous growers of the red raspberry family. Fruit very large; shape conical, color dark red, bordering on purple. Wonderfully prolific and perfectly hardy.

Cuthbert—Berries large, conical; rich crimson; very handsome, and so firm that they can be shipped without injury. Hardy.

Golden Queen—Fruit large; color a pure yellow; quality best. Ripens with Cuthbert.

London—Large fruit, dark crimson, good quality.

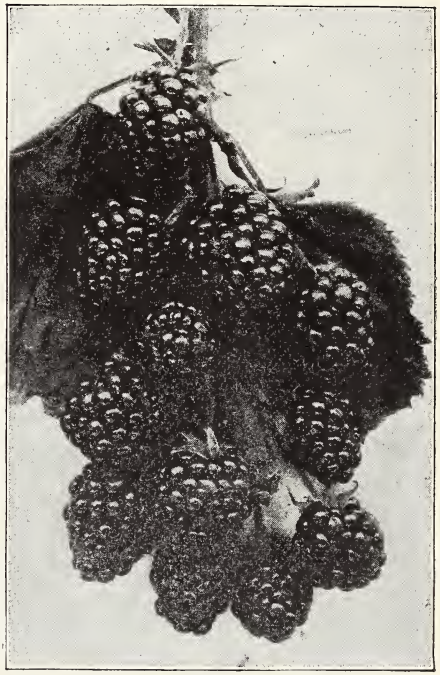
Thompson Red—The best early red. Hardy, vigorous, productive.

BLACK CAPS.

Cumberland—Fruit enormous; quality unsurpassed.

Gregg—Of great size; fine quality.

Kansas—Jet black, firm and delicious; of great size.



LAWTON BLACKBERRY.

BLACKBERRIES

Eldorado—A valuable variety; fruit medium size, jet black, melting, sweet and rich; plant hardy and very productive.

Kittatinny—Is ripe as soon as black, and much earlier, sweeter and better in all respects than the Lawton which it resembles in plant and fruit.

Lawton—Fruit very large and black; and of excellent quality; an abundant bearer.

Rathbun—Fruit very large, with small seeds, no hard core. Sweet, luscious, high flavor; color jet black; firm. Plant strong, erect. Roots as the tips like the blackcap; hardy and prolific.

Snyder—Extremely hardy, enormously productive, medium size, no hard, sour core.

DEWBERRY.

Austin—Very early, of good quality. Best for north and northwest.

Premo—Jet black, firm and good. One of the hardiest. Should be planted with Lucretia, as bloom is imperfect and needs a pollenizer.

Lucretia—The best and most dependable dewberry. Large, jet black, highly flavored and hardy. A profitable market sort.

PORTAGE GOOSEBERRY.

GOOSEBERRIES.

Chautauqua—Yellowish-white; sweet, rich, of good quality; vigorous; great yielder.

Downing—Favorite American variety; light green, with distinct veins; skin smooth; flesh rather soft; juicy and very good. Vigorous and productive.

WHITE GRAPE CURRANT.

Houghton—A medium sized American variety, which bears abundant and regular crops, and never mildews; fruit smooth, red; tender and very good; valuable.

Industry—An English variety; quite as free from mildew as our American sorts; very fine in quality; large size. Handsome, showy red fruit; wonderfully productive.

Josselyn (Red Jacket)—Best of large fruited American sorts; strong, vigorous grower, hardy and wonderful cropper. Berries pale red and highly flavored.

Pearl—Larger and more prolific than Downing.

Portage—One of the handsomest and best; large; of good quality, free from mildew, a good grower, and productive.

Smith's Improved—Large, oval; light green with bloom; flesh moderately firm; sweet and good. Vigorous grower.

CURRANTS.

Champion—(Black)—The finest Black Currant.

Cherry (Red)—Very large; deep red; rather acid; bunches short.

Fay's Prolific (Red)—Of large size, fine flavor and twice as prolific as the Cherry.

Perfection (New)—Color, bright red. Larger than Fay and Cherry. Very productive. Quality fine. Not so acid as Fay.

White Grape—The finest of the white sorts.

FAY'S PROLIFIC CURRANT.

MULBERRIES.

Downing's Everbearing—The beauty of this as a lawn or street tree is quite enough to commend it, but in addition it yields an abundant supply of its large refreshing berries for about three months.

Russian—A hardy, rapid-growing tree. Fruit of little value.

ASPARAGUS.

Conover's Collossal—A well-known and popular variety.

Palmetto—A very early variety; even, regular size of excellent quality.

RHUBARB OR PIEPLANT.

Early Scarlet—Smaller than Myatt's early and very highest quality.

Myatt's Linnaeus—Of superior quality; tender, with a mild sub-acid flavor.

NUTS

ALMONDS.

HARD SHELL—A fine, hardy variety with a large plump kernel.

SOFT SHELL—Not as hardy as above; kernels sweet and rich.

BUTTERNUT OR WHITE WALNUT

A fine native tree, producing a large, longish nut, prized for its sweet kernel.

CHESTNUT.

AMERICAN SWEET—A native tree. Nuts sweet, of delicate flavor, and a valuable article of commerce.

JAPAN—Dwarf grower; productive, usually producing nuts when two or three years old. Nuts of immense size.

SPANISH—A handsome round headed tree, producing abundantly large nuts.

FILBERT.

ENGLISH—Of easiest culture; 6 to 8 feet high; hardy, profitable and satisfactory.

KENTISH COB—One of the best; large size, oblong, of excellent quality.

HICKORY.

SHELL BARK—To our taste no other nut that grows, either foreign or native, is superior to this in quality. The tree is of sturdy, lofty growth.

PECAN.

Not hardy in the north, one of the best and most profitable where it succeeds.

WALNUT.

BLACK—A native tree of large size and majestic form, beautiful foliage. Tree a rapid grower, producing a large round nut of excellent quality.

ENGLISH DWARF PROLIFIC (Præparturiens)—A dwarf variety of English Walnut commences bearing very young; very prolific.

ENGLISH CONCORD—Seedling. New and good.

ENGLISH FRANQUETTE—Seedling. Large, thin shell.

ENGLISH MAQUETTE—Seedling. Large splendid quality.

FRENCH CHABERTE—One of the best, very productive, extra fine quality.

JAPAN SIEBOLDI—Hardy, rapid grower, handsome form, immense leaves; bears young and abundantly.

SPRIG OF BARBERRY.

ORNAMENTAL DEPARTMENT.

DECIDUOUS TREES.

(Those varieties which do not retain their foliage during the winter.)

ALDER (Alnus).

IMPERIAL CUT-LEAF (Laciniata imperialis)—Of stately, graceful growth, having deeply cut foliage. Vigorous and very hardy. Attains a height of about twenty feet.

ASH (Fraxinus)

EUROPEAN FLOWERING (F. Ornus)—Flowers greenish white, fringe-like, appearing only on the ends of the branches. Blooms early in June. 20–30 ft.

GOLD BARKED (F. Aurea)—Conspicuous, particularly in winter, on account of its yellow bark and twisted branches. 15–20 ft.

WHITE (Alba)—The native ash. 8–10 ft.

BEECH (Fagus).

AMERICAN (F. Ferruginea)—A well-known native sort. 6–8 ft.

FERN-LEAVED (F. heterophylla)— An elegant tree of symmetrical habit, having beautiful cut, fern-like foliage. 5 ft.

PURPLE-LEAVED (F. purpurea)—Dark purplish foliage, making a striking contrast with the green of other trees.

RIVERS—Crimson foliage early in the spring, changing to a dark purple in summer. The finest of all purple-leaved trees.

BIRCH (Betula).

Graceful and suitable for any lawn. Hardy and thrifty in all soils.

Canoe, or Paper Birch (B. Papyracea)—This magnificent tree has gathered about it more poetic associations than any other native tree. 8 to 10 feet.

Common White (B. Alba)—A well-known variety, making a vigorous, erect growth, and having long, slender branches. Very desirable. 8 to 10 feet.

Purple-Leaved (B. Foliis purpureis)—A variety possessing the vigorous habit of the species, and having rich purple foliage. 6 to 8 feet; 8 to 10 feet.

CATALPA.

C. Speciosa—This is a tropical looking tree, and flowers in July, when few trees are in bloom. A very attractive lawn tree. 7 to 8 feet.

C. Bungei—A small species 8 to 10 feet high and twice as broad, clothed with a dense mass of large, heart-shaped leaves.

CHESTNUT (Castanea).

Americana (American Chestnut)—This native tree is a rapid grower, and its nuts are sweeter than those of any other variety known. 6 to 8 feet.

Japonica—Bears when five years old. The nuts are three times larger than those of the Americana but not so sweet.

Paragon—Bears when three years old; nuts large as a half dollar. Fruit sweet and of best quality.

CATALPA BUNGEI (Page 15).

CHERRY (Cerasus).

A handsome ornamental tree, especially adapted for small grounds.

Chinese Double Flowering (Sinensis Flore Plena)—A valuable variety, with large, double white flowers. 5 to 6 feet.

Seibold's Double Red Flowering (Seboldii Rubra Plena)—A valuable red blossoming variety. 5 to 6 feet.

CRAB (Pyrus).

Bechtel's Double Flowering Crab—A medium-sized, ornamental tree of great beauty. When in bloom this tree presents the appearance of being covered with pink roses. Flowers large, fragrant and beautiful. 3 to 4 ft.

Floribunda—Flowers crimson, produced in great profusion. A charming variety. 3 to 4 feet.

DOGWOOD (Cornus).

White Flowering (Florida)—Foliage of a grayish green color; turning in the autumn to a deep red. The flowers appear before the leaves in the spring and are about three inches in diameter; white and very showy. 3 to 4 feet; 4 to 5 feet.

Red Flowering (Flora Rubra)—A valuable variety, producing beautiful carmine flowers.

ELM (Ulmus).

American White (Americana) A native tree of large size, with open, spreading head and graceful drooping branches. 6 to 8 feet.

English (Campestris)—A native of Europe, forming a tall, erect tree, with slender branches and small leaves. 6 to 8 feet.

HALESIA (Snowdrop. Silver Bell).

Tetraptera—Most beautiful when covered with its silver bell flowers in May. 6 to 8 feet.

HONEY LOCUST.

Three Thorned Acacia (Gleditschia Triacanthus)—A rapid growing tree;

AMERICAN WHITE ASH (Page 15).

delicate foliage, of a beautiful fresh, lively green, and strong thorns. Makes an exceedingly handsome, impenetrable and valuable hedge.

HORSE CHESTNUT (Aesculus).

European or White Flowering (Ae. hippocastanum)—A beautiful well known tree, forming a round compact head, with dark green foliage and an abundance of showy flowers in spring. 8 to 10 feet.

Red Flowering (Rubicunda)—A splendid tree producing showy red flowers a little later in the season than the white. 6 to 8 feet.

Glabra (Ohio Buckeye)—A native of the Western States; leaves smooth; flowers yellow; blooms before the others. 6 to 8 feet.

JUDAS TREE (Cercis).

American (C. Canadensis)—A very ornamental tree with heart-shaped leaves. Before the foliage appears, it is covered with a profusion of delicate pink flowers, from which it derives its name, Red Bud. 5 to 6 feet.

KOELREUTERIA.

Paniculata—A large shrub or small tree, with foliage somewhat resembling that of the Sumach, and producing large panicles of showy flowers in July. Foliage very brilliant in Autumn.

LABURNUM (Cytisus).

Golden Chain — Bears long, pendant racemes of golden flowers in June. Very showy and beautiful. 6 feet.

LARCH (Larix).

European (Europæa)—A beautiful, rapid-growing tree of irregular, pyramidal form, with small, drooping branches. 5 to 6 feet.

LINDEN OR LIME (Tilia).

American, or Basswood (Americana) A rapid-growing, open-head or spreading tree, with large leaves. Very desirable. 6 to 8 feet; 8 to 10 feet.

European (Europæa)—A very fine pyramidal tree, smaller in all its parts than the preceding.

White-Leaved European (Alba)—A vigorous growing tree, with large handsome foliage, quite downy and whitish underneath; smooth above.

LOCUST (Robinia.)

Pseud-Acacia (Yellow Locust)—A dense-growing upright tree, with very numerous clusters of creamy white flowers; quite fragrant. 6 to 8 feet.

MAGNOLIA.

Chinese White (Conspicua)—A small tree, quite hardy, producing large, pure white flowers—very numerous—and appearing before the leaves.

Cucumber Tree (Acuminata)—A magnificent tree, producing in June yellow flowers, tinted with bluish purple.

Glauca (Sweet Bay)—Irregular in habit; foliage thick, glossy, deep green. It blossoms in June; flowers white and sweet-scented.

Lenne (Lennei)—A very showy flower; cup-shaped; crimson-purple outside and pearl colored within. One of the finest of the purple Magnolias.

Showy Flowered (Speciosa)—Flowers a little smaller than Soulangeana; bloom a week later and remain longer on the tree than any other variety.

Stellata; Halliana (Hall's Japan Magnolia)—Dwarf habit; blooms earlier than other Magnolias, producing double pure white, fragrant flowers. Very desirable.

JAPANESE MAPLE (Polymorphum).

Soulangeana—A variety of the Conspicua, with showy white and purple flowers, cup-shaped and three to five inches in diameter; one of the finest.

MAPLE (Acer).

Ash-Leaved (Negundo)—A rapid-growing tree, with leaves and branches of a light green. 6 to 8 feet.

Ginnala—An exquisite miniature maple, with deeply notched leaves, which take on the most gorgeous colors in October.

Norway (Platanoides)—Very popular on account of its clean, broad foliage of rich, deep green. Stout, vigorous grower.

EUROPEAN LINDEN

Scarlet or Red (Rubrum)—Remarkable in the Spring for its masses of red flowers and seed pods and in the Fall for its brilliant crimson leaves.

Schwedler's Norway (Schwedlerii)—Young shoots and leaves of a purplish crimson color. 6 to 8 ft.

Silver-Leaved, or White (Dasycarpum)—A hardy, rapid-growing native variety of the largest size; foliage bright green above and silvery underneath. Valuable for producing a quick shade.

Sugar or Rock (Saccharinum)—A well-known native tree. Desirable as an ornamental shade tree.

Wier's Cut-Leaved (Wierri Laciniatum)—Grows very rapidly, and the shoots are so slender and drooping that it has a decidedly graceful appearance. The leaves are deeply and delicately cut.

JAPANESE MAPLES.

Cut-Leaved Purple Japan (Dissectum Atropurpureum)—One of the most striking and handsome varieties of the Japanese Maples. Form dwarf and weeping. Leaves are of a beautiful rose color, deeply and delicately cut, giving them an elegant fern-like appearance.

Dark Purple-Leaved Japan Maple (Atropurpureum)—Forms a bushy shrub; foliage dark purple, very ornamental. The best of the Japan Maples. One of the choicest small trees in the catalogue. 2 to 3 feet; 3 to 4 feet.

Japan (Polymorphum)—The normal form or type; growth shrubby; foliage small and of a cheerful green in spring and summer, changing to a lovely crimson in autumn. 3 to 4 feet.

MAIDEN HAIR TREE OR GINGKO (Salisburia).

Adiantifolia—A rare beautiful tree from Japan, with remarkable fern-like foliage; distinct and fine. 6 to 8 feet.

MOUNTAIN ASH (Sorbus).

Highly ornamental trees, particularly when covered with scarlet berries.

CAROLINA POPLAR. (Page 20)

MAGNOLIA SOULANGEANA, THE MOST POPULAR OF THE MAGNOLIAS (Page 17).

American (S. Americana)—Of coarser growth and foliage than the European, and having larger berries of a lighter color. White blossoms appear in early spring, followed by clusters of scarlet berries.

European (S. Aucuparia)—Of finer growth and form than the American. It blossoms during the early spring, after which the bright scarlet berries are formed in clusters. 20 to 35 feet.

Oak-Leaved (S. Quercifolia)—Very showy whether in bloom or berry. It forms a compact, pyramidal head. The leaves are bright green above and downy beneath. The blossom is white, forming in early spring. 20 to 25 feet.

MULBERRY (Morus).

Broad, low-branching, large-leaved, large-sized,fruit-bearing ornamental trees.

Downing (M. Multicaulis)—A pretty lawn tree, bearing fruit.

American—A variety said to be superior to the Downing.

Russian—A hardy, rapid-growing tree. The foliage is abundant and attractive; said to be desirable for silk worms. The timber is also valuable. Makes a large tree.

OAK (Quercus).

American White (Alba)—One of the finest American trees, of large size and spreading branches.

Burr, or Mossy Cup (Macrocarpa) One of the noblest varieties; foliage the largest and most beautiful.

Rubra (Red Oak)—A broad tree of rapid growth; large, rich foliage, which turns to a bronzy red in the fall. Deservedly popular.

Scarlet Oak (Coccinea)—A native tree, of rapid growth; pyramidal outline, and especially remarkable in Autumn, when the foliage changes to a bright scarlet.

Pin Oak—A tall, upright growing variety when young, but with age the branches droop. Foliage bright and

glossy. One of the best oaks for street planting, and becoming very popular.

POPLAR (Populus).

Desirable where rapid growth is wanted.

Bolleana—A very compact upright grower, resembling the Lombardy Poplar; leaves glossy green above and silvery beneath. The bark of this variety is of a rich green color, giving it a distinct and striking appearance.

Carolina—Pyramidal in form and robust in growth. Leaves large, serrated and pale to deep green in color.

Lombardy (Fastigiata)—Well known for its erect, rapid growth and commanding form.

Trichocarpa—A fine new Poplar with long, oval leaves, dark green above, silvery beneath, of very vigorous growth.

PEACH (Persica).

Double Rose-Flowering (P. Flore rosea pleno)—Flowers double, pale rose colored, like small roses. Blooms in May.

Double White-Flowering (P Flore alba pleno)—Exceedingly ornamental. Flowers double and pure white. Blooms in May.

PLUM (Prunus).

Pissardii—A beautiful plant with black bark and dark purple leaves; the new growth is especially bright. The fruit is red.

SYCAMORE (Plantanus).

Silver-Leaved, or White (Alba)—Leaves large, green above and pure white underneath. Rapid growth; widespreading habit.

Oriental Plane—A lofty, wide-spreading tree; heart-shaped leaves. Entirely free from worms or insects. One of the oldest cultivated trees known.

THORN (Crataegus).

Dense, low-growing trees, and very ornamental when in bloom.

Double White (Alba Pleno)—Flowers small, clear white and desirable.

Paul's New Double (Coccinea Flore Pleno Paulii)--Producing bright crimson and very double flowers. One of the best.

TULIP TREE, OR WHITE WOOD (Liriodendron).

Tulipifera—One of our largest native trees, with large, glossy leaves, shaped like a violin. Very desirable.

YELLOW WOOD (Virgilia Intea).

One of the finest native trees. Flowers very fragrant, pure white, and produced in long, drooping racemes in June.

WILLOW (Salix).

Golden (Vitellina Aurantiaca)—Very conspicuous on account of its yellow bark.

Laurel-Leaved (S)—A fine tree, with large, shiny leaves.

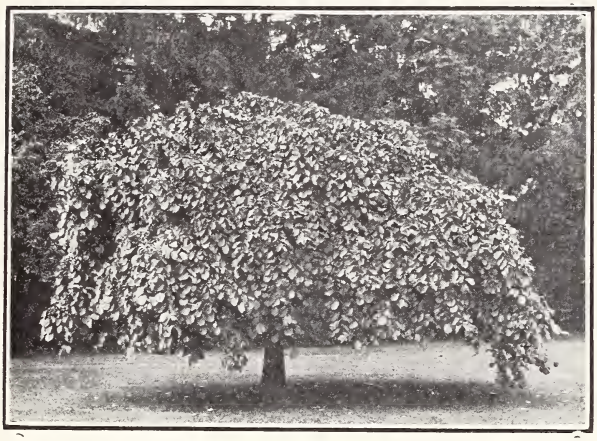
Rosemary-Leaved (Rosmarinifolia)—Makes a striking, pretty, small-sized tree.

Kilmarnock Weeping (Caprea Pendula)—A distinct variety, it makes a very desirable small lawn tree, having a perfect umbrella-shaped head, and with the branches drooping gracefully to the ground.

Weeping (Babylonica)—Our common, well-known weeping variety; forms a large, round-headed, graceful tree.

Elegantissima (Thurlow's Willow)—Similar to, but more upright growing than Babylonica. Is a better grower and a more hardy tree

WEEPING CUT-LEAF BIRCH (Page 21).



CAMPERDOWN ELM.

WEEPING DECIDUOUS TREES.

The superior grace and excellence of the weeping varieties render them especially adapted to the yard or lawn. They must be trained to attain the best form.

ASH (Fraxinus).

Golden-Barked Weeping (F. Aurea pendula)—During the winter the bark is as yellow as gold, making a striking effect.

BEECH (Fagus).

Weeping (F. Pendula)—Of wonderful grace and beauty when covered with its rich, luxuriant foliage.

BIRCH (Betula).

Cut-Leaved Weeping (B. Pendula laciniata)—This tree is indeed a picture of delicacy and grace. Makes a large tree.

Young's Weeping (B. Pendula Youngii)—The fine thread-like shoots droop to the ground, forming a picturesque tree.

CHERRY (Cerasus).

Japan Weeping (C. Japonica rosea pendula)—Rose-colored flowers. Slender branches which droop gracefully to the ground. Suitable for small grounds.

DOGWOOD (Cornus).

Weeping (C. Pendula)—A weeping form of the White Flowering distinct from all other weeping trees. Possesses the abundant bloom, handsome foliage and fruit of the White Flowering and makes a magnificent specimen

ELM (Ulmus).

Camperdown Weeping (U. Camperdown pendula)—One of the most satisfactory weeping trees in cultivation. The growth is rapid, the foliage luxuriant; it forms a fine-shaped head, and is very hardy.

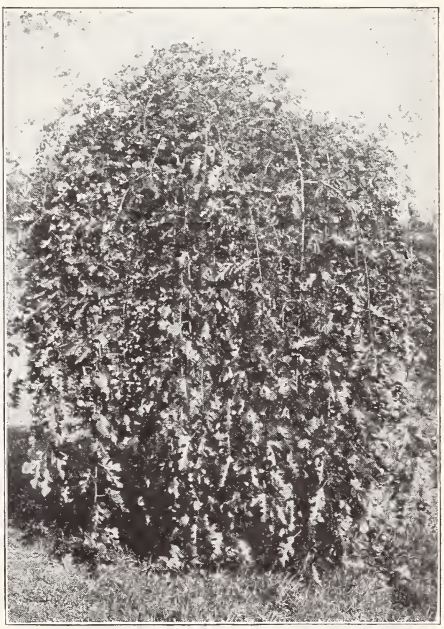
LILAC.

Japan Weeping—A graceful shrub from the mountains of Japan. The flowers are borne in clusters and are very fragrant. It is especially adapted for planting in small yards or lawns, also among groups of shrubbery. It is very hardy.

LINDEN OR LIME (Tilia).

White-Leaved Weeping (T. alba pendula)—Slender, drooping branches, and large foliage. One of the finest and a good variety for a large lawn.

Americana—A spreading tree with large leaves and fragrant flowers.



TEA'S WEEPING MULBERRY (Page 22)

MULBERRY, TEA'S WEEPING.

Perfectly hardy, forming a natural umbrella-shaped top or head; foliage handsome; a fine ornamental for the lawn.

WILLOW (Salix).

American (S. Americana pendula)—A variety with delicate leaves and slender branches. Graceful and ornamental. Never grows large.

Babylonica—Our common and well-known Weeping willow.

Kilmarnock (S. Caprea pendula)—The best known of the finer weeping ornamental trees. Its great hardiness, vigorous growth, adaptability to all soils, easy culture, fine form, and unique appearance render it a general favorite.

Thurlow Weeping—Of stately proportions with graceful drooping branches and bright, long glossy leaves. The hardiest and best of the willows.

EVERGREEN TREES.

Evergreens are difficult to transplant and should never be set in the fall. We supply only the varieties described below.

ARBOR VITAE (Thuja).

American (T. Occidentalis)—A native variety, valuable for hedges. Stands shearing well.

var. **Aurea**—Golden foliage; fine.

var. **compacta**—A dwarf compact form.

Globe Headed (var. globosa)—A dwarf round headed variety.

Pyramidalis (var.)—Dark green, compact foliage and remarkably erect form; perfectly hardy.

Siberian (var. Sibiricus)—The hardiest variety. Good for hedges and screens, and the best for single specimens on the lawn.

Tom Thumb (var.)—A dwarf variety of the American. Valuable for small enclosures or low hedges. Compact growth.

CYPRESS (Cypressus).

Lawson's (Lawsonia)—Makes a large tree, with drooping branches and dark green foliage.

FIR (Abies).

Balsam, or **American Silver** (balsamea)—A regular, symmetrical tree, assuming the conical form; leaves dark green above, silvery beneath.

Nordmann's Silver Fir (A. Nordmanniana)—Of symmetrical form, vigorous and quite hardy. Its foliage is massive, dark green, shining above and slightly glaucous below, rendering it a very handsome tree throughout the year.

THE PYRAMIDAL ARBOR VITAE.

P. concolor (Silver Fir of Colorado)—The finest of the Rocky Mountain evergreens. Tree of graceful habit; broad, handsome foliage, bluish above, silvery beneath. Very distinct and rare.

JUNIPER (Juniperus).

Chinensis Aurea (Golden Chinese Juniper)—One of the finest evergreens; spreading habit and beautiful gold-marked foliage.

Chinensis (Argenteo-variegata)—A beautiful variegated variety, in which numerous sprays of white are prettily interspersed among the dark green foliage.

Hibernica (Irish Juniper)—Tree with dense pillar-like growth. Glaucous green foliage, with tips of branchlets erect.

Virginiana (Red or Virginia Cedar)—A native form, very common in New England. Tapering, bright, rich green foliage. Bark on trunk and branches reddish brown. Thrives on dry soil.

Glauca (Blue Virginia Cedar)—One of the handsomest forms of these hardy evergreens. Foliage is distinctly silvery gray, holding its color throughout the year. Attracts attention wherever seen. Should be in every collection of evergreens.

Prostrata (Prostrate Juniper)—Low, spreading, native species, trailing close to the ground. Foliage bright green; bronzy in Winter. Fine for rockwork or banks.

Prostrata, Aurea (Golden Prostrate Juniper)—A most beautiful plant, of low, spreading habit; forms a dense mass of foliage of a reddish brown shade, brilliantly tinged with yellow.

RETINISPORA OBTUSA.

PINE (Pinus)

Austrian or **Black** (P. Austriaca)—A robust growing sort. Leaves long, stiff, dark green. Makes a large spreading tree.

Mugho (Dwarf Mugho)—An upright, small, beautiful pine bush.

P. ponderosa—Heavy wooded pine.

Scotch (P. sylvestris)—A fine, robust, rapid growing tree, with stout, erect shoots and silvery-green foliage.

Umbrella Pine (Sciadopitys verticillata)—A Japan evergreen tree with perfectly upright trunk with horizontal branches, bearing whorls of shining green, very broad, flat needles, lined with white on under side. Most elegant and unique conifer.

White, or **Weymouth** (Strobus)—Our common White Pine, and the handsomest of all the native species.

RETINISPORA (Japan Cypress).

Filifera—This has slender, string-like, drooping shoots. Quite distinct from any other. It makes a unique specimen evergreen.

Filifera Aurea—A golden form of the preceding.

Obtusa—A charming lawn tree of vigorous growth, assuming a pyramidal outline, yet with a pleasing, open habit and graceful, waving branches

Obtusa Nana—One of the best and hardiest. Intensely dark, shell-like leaves; very unusual. A most elegant evergreen shrub.

Plumosa—More compact growing than Filifera, and makes a nice ornamental tree.

Plumosa Aurea—One of the best known and most valued of all, because of its golden color. It makes a compact growth of much beauty.

Pisifera—Beautiful tree, with delicate branches and fine, feathery foliage.

Pisifera Aurea—A fine pyramidal, bright golden form; popular and graceful.

Squarrosa—This valued sort has steel-colored foliage and makes a tufty, compact growth. It grows to a large size, but by pruning can be kept down to almost any size, as, in fact, can all Retinisporas.

SPRUCE (*Picea*).

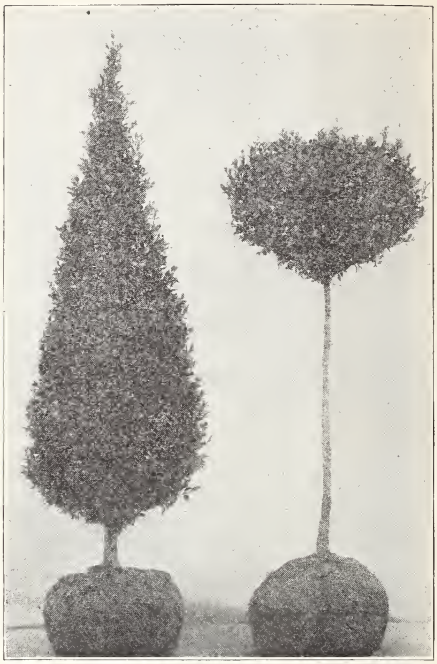
Colorado Blue Spruce—A beautiful variety, the nearest blue of any evergreen; very distinct in foliage and growth; fine, compact habit. Foliage rich blue or sage color.

Douglas Spruce (A. Douglasii)—From Colorado. Large conical form; spreading branches; horizontal; leaves light green above, glaucous below.

Hemlock (A. Canadensis)—Delicate, dark colored foliage, and drooping branches. Good for lawn, and also makes a good hedge.

Koster's Blue—A selected strain from the bluest tints of the Colorado Blue. This tree is propagated by grafting to preserve the true type making it much more expensive than seedling trees. One of the most attractive conifers ever introduced. It holds its deep color throughout the year. Price according to height and shape.

Norway (A. excelsa)—Of large and lofty appearance. Well adapted for large enclosures, and stands pruning well. It is exceedingly picturesque and beautiful; very popular and deservedly so. Includes weeping varieties.



BOX TREES. (Page 26)

American White (A. alba)—A tall tree, loose spreading branches, and foliage silvery gray. Very bushy and valuable.

TAXUS (Yew).

Canadensis (American yew)—A native evergreen, very hardy, and one of the few evergreens that even prefers a shady situation.

Cuspidata (Japan yew)—A rare and beautiful, low-growing evergreen. It is hardy as an oak and remains a deep green through the winter, even when exposed to sun and wind.

English (T. baccata)—A fine pyramidal variety of the English Yew, with dark green foliage. Hardy and desirable.

SHRUBS SUITABLE FOR PLANTING IN SHADY SITUATIONS.

Barberry, European and others.
Box, in variety.
Ceanothus.
Clethra, alnifolia.
Cornus.
Deutzia.
Euonymus.
Forsythia, viridissima.
Honeysuckle.
Kalmia, latifolia.
Mahonia, aquifolia.
Myrica, cerifera.
Myrtle.
Privet, in variety.
Rhododendron.
Rhus, aromatica.
Rubus, odoratus.
Symphoricarpus.
Viburnum.
Yew, Canadian.

The Viburnums will not flower in shady places, but the growth is very luxuriant.

EVERY HOME SHOULD HAVE ITS SETTING OF TREES, SHRUBS, VINES AND FLOWERS.

A BED OF RHODODENDRONS.

BROAD LEAVED EVERGREEN SHRUBS.

ANDROMEDA.

Floribunda—Admired for its racemes of white flowers in early May, as well as for its evergreen character and hardy nature.

Japonica—A beautiful species, having bright green leaves and drooping racemes of waxy white flowers. Blossoms early in May. One of the most beautiful of dwarf broad-leaved evergreens.

LAUREL.

Mountain Laurel (Kalmia Latifolia)—In its blooming season this is almost as showy as the Rhododendrons. The white and pink flowers are borne in great showy clusters in May.

AZALEA.

Amoena—This little gem is practically ever green. In late Spring the plants are literally smothered with masses of rosy-crimson flowers. Bushy plants, 12 to 15 inches high.

BOX (Buxus).

The different species vary in size from low bushes to medium-sized trees. All are long-lived, of dense, compact growth, and have dark green, glossy leaves. They are used for grouping, edging walks, planting against house foundations, for hedges, and in tubs, for formal gardens, terraces and porches. Will grow in sun or shade, but we have found it advisable to use some protection during very severe winters.

Box for edging, 4 to 6 inches.
Bushes, 18 to 24 inches.
Pyramid shaped, 3 feet.
Standard or Tree-shaped, 3 feet.

HOLLY (Ilex).

Crenata—Beautiful dense growing evergreen with small, deep, glossy green foliage. A plant of great ornamental merit.

MAHONIA.

Aquifolia (Holly-Leaved Mahonia)—Of medium size; large, shining, purplish green, prickly leaves, and bright yellow flowers in Spring. Very fine in masses or borders.

RHODODENDRON.

Hybrid Rhododendrons are superb evergreen shrubs, producing dense clus-

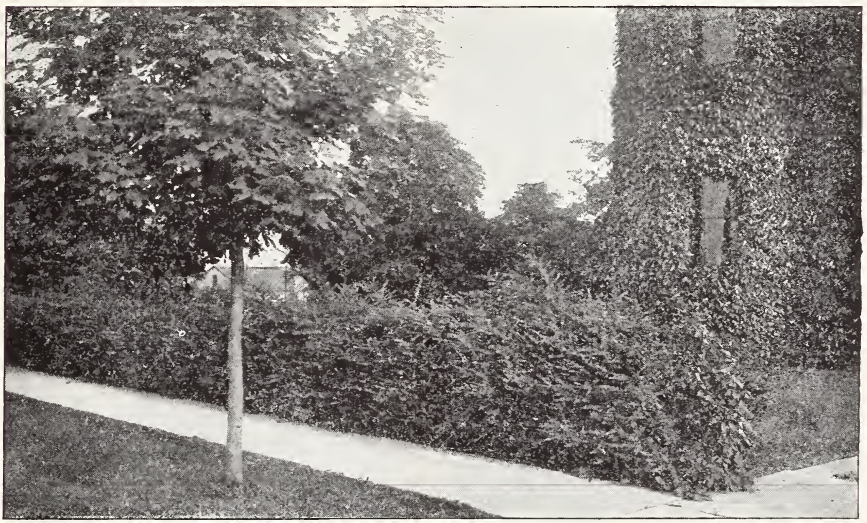
ters of magnificent flowers, being white, red, pink and purple. We can supply all colors, and offer a large list of named varieties. Very ornamental and desirable, especially when grouped.

Rhododendron Maximum (Great Laurel)—This is the hardy native Rhododendron which blooms in Midsummer, with their white, bluish and delicate pink flowers. They are valuable for planting alone, in groups, or interspersed among other shrubbery, or with the brighter hybrid Rhododendrons.

YUCCA (Adam's Needle).

Filamentosa—Broad, sword-like foliage and tall, branched spikes of large, fragrant, drooping, creamy-white flowers during June and July make it an effective plant for all positions.

FLOWERING SHRUBS.



THE JAPANESE BARBERRY, A FINE DECIDUOUS HEDGE PLANT.

ALTHEA OR ROSE OF SHARON (Hibiscus).

The altheas are free growers, and not particular as to soil. They bloom in August and September, when but few other sorts are in blossom. They attain a height of from six to ten feet.

Double Purple (H. Purpurea fl. pl.).
Double Red (H. Rubra fl. pl.).
Double Pink.
Double White (Alba)—Very large and double, with reddish-purple center.

Variegated Leaved; Double Purple Flowered (Flore Pleno fol. var.)—A conspicuous variety with leaves distinctly marked with light yellow, and having double purple flowers; showy and desirable.

ALMOND (Prunus Sinensis).

Dwarf Double Rose Flowering (A. Japonica fl. rubra pl.)—A small shrub, producing in May, before the leaves appear, small, double, rose-like flowers, closely set on the branches.

Dwarf Double White (A. Japonica fl. alba pl.)—Produces beautiful white flowers in May.

AZALEA. ANGELICA TREE.

A small tree that gives a tropical appearance to gardens. Requires slight protection in winter.

A. Japonica—Large tripinnate leaves; flowers white, in large spikes in September.

A. spinosa (Hercules Club)—A native plant, valuable for producing tropical effects.

Pentaphylla—A pretty shrub, of medium size and rapid growth, with fine lobed palmate leaves.

AZALEA.

Ghent—Sufficiently hardy for open air culture and will stand our winters without protection, though a mulching of straw or loose litter is desirable. Can be furnished in all colors.

ALTHEA, DOUBLE PINK (Page 27)

A. Mollis—A hardy species from Japan. One of the most valuable flowering shrubs. Flowers large and showy, in fine trusses and of various colors.

BARBERRY (Berberis).

American (Canadensis)—Yellow flowers, succeeded by red berries.

Purple Leaved (Purpurea)—A very handsome shrub, growing from three to five feet high, with violet-purple leaves and fruit.

Sieboldii (Siebold's Barberry)—A Japanese form, with very showy, solitary fruits of comparatively large size.

Thunberg's (Berberis Thunbergi)—A low, dense, neat little shrub, with a profusion of white flowers in May. These are followed by a heavy crop of rich red berries that cling through the winter. In autumn when both leaves and berries are bright red it is very showy. Valuable for ornamental hedges, masses, borders, etc.

CALYCANTHUS FLORIDUS
(Or Sweet Scented Shrubs).

Blooms in June and at intervals through the summer. Flowers of a rare chocolate color; rich foliage. The wood and blossoms have a peculiarly agreeable flavor.

CLETHRA ALNIFOLIA.

Sweet Pepper Bush—A pretty little shrub that blooms freely for several weeks in summer; very fragrant white flowers.

CURRANT (Ribes).

The flowering currants are beautiful shrubs, in early spring and of easiest culture.

Yellow Flowering (R. Aureum)—Bright foliage, small yellow flowers, appearing in early spring.

TREE ALTHEA OR ROSE OF SHARON (Page 27).

Crimson Flowering (R. Sanguineum)—Small deep red flowers, blooming in early spring very abundantly.

DEUTZIA.

The Deutzias are of Japanese origin, extremely hardy, luxuriant foliage, very attractive flowers, and fine habit.

Crenata—Double white flowers tinged with rose. Blooms the middle of June. 5 feet.

Gracilis—A graceful and charming shrub, with pure white flowers. Blooms the middle of June.

Lemoinei—Flowers pure white, borne on stout branches of upright growth. Dwarf and free flowering.

Pride of Rochester—One of the finest varieties, large double white flowers. It excels the older sorts in size of flowers, profuseness of bloom and vigorous habit. Blooms early in June.

DOGWOOD (Cornel or Cornus).

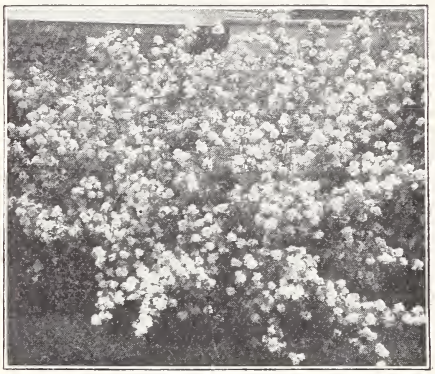
C. alba—Very conspicuous and ornamental in winter when the bark is blood red.

var. **Elegantissima Variegata**—One of the finest variegated shrubs; of rapid growth. The leaves are broadly margined with white, while some are entirely white.

GOLDEN ELDER.

var. **Sibirica** (Red Siberian)—During the winter the bark is of a bright red color. The foliage is beautifully silvery margined.

C. Mascula (Cornelian Cherry)—A small tree, native of Europe, producing clusters of bright yellow flowers early in spring, before the leaves, followed by red berries.



DEUTZIA LEMOINEI.

var. **variegata** (Variegated Cornus)—The flowers are bright yellow and are borne in clusters in early spring, before the leaves appear. The foliage is beautifully variegated with white. Makes a small shrub.

ELDER (Sambucus).

Hardy, easily grown shrubs.

S. Canadensis (Common Elder)—Broad panicles of white flowers in June; reddish purple berries in autumn.

var. aurea (Golden Elder)—A handsome variety, with golden yellow foliage. A valuable plant for shrubberies.

var. laciniata (Cut-leaved Elder)—One of the best cut-leaved shrubs.

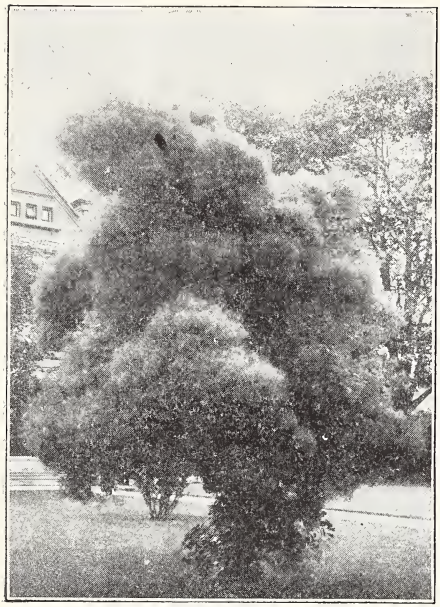
ELEAGNUS (Oleaster).

E. argentea (Silver-leaved)—A native species of erect growth and silvery foliage. Flowers small, yellow. July and August.

E. longipes (Japan Oleaster)—In July the plant is covered with red berries. The bush is highly ornamental, the leaves remaining fresh till late in autumn.

EXOCHORDA.

E. Grandiflora (Pearl Bush)—From North China. A compact, hardy bush 10 to 12 feet high; can be trimmed into any desired shape. The flowers are borne in May in slender racemes of eight to ten florets each.



PURPLE FRINGE.

FILBERT (Corylus. Hazlenut).

C. American—The well known American hazel nut.

C. avellana var. atropurpurea (Purple leaved filbert)—A very conspicuous shrub with large, dark purple leaves.

C. a. var. aurea (Golden-leaved filbert)—A rare and beautiful shrub; foliage bright golden color.

FORSYTHIA.

F. Fortuneii—Growth upright, foliage deep green, flowers bright yellow. Early flowering shrub. Very hardy.

F. Viridissimi—An elegant, hardy shrub. Bark and foliage a dark green color. Beautiful yellow flowers. Blooms in May before the leaves appear.

Intermedia—This also is an erect-growing shrub, but when full grown the branches become arching and it resembles Suspensa; very floriferous.

Suspensa—In this variety we have the weeping form with long, pendulous branches; golden-yellow flowers early in April.

FRINGE (Chionanthus).

Purple Fringe, or Smoke Tree (Rhus Cotinus)—A small tree or shrub, very much admired on account of its peculiar fringe or hair-like flowers, covering the whole surface of the bush in mid-summer.

White (C. Virginica)—A superb shrub. 10 to 20 feet. Has a compact, roundish form, large, glossy leaves, and drooping racemes of pure white flowers. Blossoms in May and June.

HONEYSUCKLE—UPRIGHT (Lonicera).

Fragrant Upright (L. Fragrantissima)—A desirable variety, with dark almost evergreen foliage. Small, very fragrant flowers. Blooms in May. A valuable shrub.

Morrowi—One of the handsomest of the bush honeysuckles. Wide spreading branches, bush 6 feet. Flowers followed by bright red fruit in August, persisting until late in fall.

Red Tartarian (L. Tartarica rubra)—Blooms in May. Bright pink flowers.

White Tartarian (L. Tartarica alba)—Blooms in May. Flowers a dull white color.

WHITE FRINGE.

HYDRANGEA.

H. arborescens grandiflora alba—The blooms are large, snow white and foliage

finely finished. Hardy. Season from June through August. Best Hydrangea.

H. Paniculata Grandiflora—Hardy; thrives in all soils ; grows rapidly and blossoms profusely. The flowers are pure white, afterwards changing to pink.

HYPERICUM (St. John's-wort).

Hypericum (Aureum)—A dense, globular shrub with oval, glossy, foliage and myriads of bright golden-yellow flowers, borne for a period of several weeks.

ILEX (Holly).

Verticillata (Black Alder, or Winterberry)—Of close, upright growth, with oval foliage; thickly studded in autumn and throughout the winter with masses of most brilliant scarlet berries.

JAPAN QUINCE (Pyrus Japonica).

C. Japonica—Very ornamental in early spring, as its bright scarlet flowers completely cover the branches before the leaves are formed. Makes a good hedge.

KERRIA (Corchorus. Globe Flower).

Japonica—A beautiful shrub of graceful open habit, with slender green branches clothed with pointed soft green foliage and thickly studded with single, deep golden-yellow flowers in early summer and also borne at intervals in smaller quantities throughout the summer.

Flore Pleno—Double flowering kerria. A medium sized shrub, with double yellow flowers. July to October.

Foliis Variegatis (Variegated)—Of dwarf, more rounded habit than the type, with foliage beautifully edged and striped with silver.

LESPEDEZA.

Bicolor—A shrub from Japan, with slender branches, becoming tall and graceful: foliage resembles clover leaf; small purple flowers in July; a good shrub for adding variety to a border.

LILAC (Syringa).

Charles X—Deep purplish lilac flowers in large trusses.

Frau Bertha Dammann—This produces the largest clusters of white lilacs of the common species known in cultivation, and also the purest white.

Japonica—A species from Japan, becoming a good sized tree. Foliage dark green, glossy, leathery; flowers creamy white, odorless, in great panicles. A month later than other Lilacs.

Ludwig Spaeth—Deep purplish red flowers in dense, large panicles. Best of its color.

Madame Abel Chatenay—Large panicle; double white, very fine.

Marie Legraye—Large panicles of white flowers. Valuable for forcing. The finest white Lilac.

Madame Lemoine—Double. Superb double white.

President Grevy—Elegant, large, dense trusses of double, deep blue flowers. One of the finest new double sorts.

Persica (Persian Lilac)—Small foliage and bright purple flowers.

Alba (White Persian Lilac)—Delicate white fragrant flowers, shaded with purple. A superb variety.

Vulgaris (Common Lilac)—Bluish purple flowers. A standard variety.

Alba (Common White Lilac)—Cream colored flowers.

PLUM (Prunus).

Prunus Pissardii (Purple-leaved)—A perfectly hardy, small-sized tree or shrub, of elegant appearance. The bark is black, and the leaves a rich purple, gorgeous to behold, retaining their bright color through the entire season. The ends of the growing shoots are brilliant red.

P. Triloba (Double flowering)—A very pretty little shrub, hardy and desirable. The flowers about an inch in diameter, semi-double, of a delicate pink color, appearing in May.

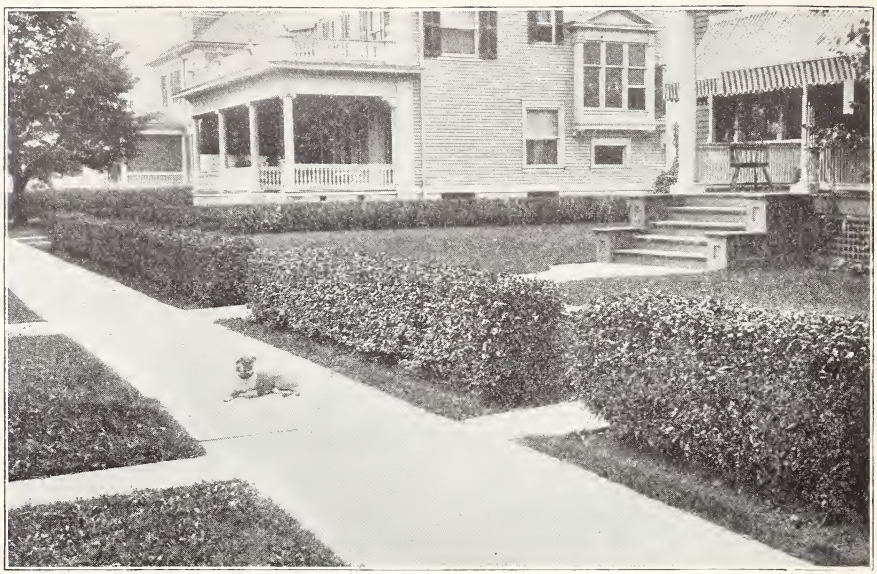
PRIVET (Ligustrum).

Chinese Privet (L. Ibota)—A valuable shrub, native of China and Japan. Flowers, large, white, very fragrant, produced in great profusion; leaves long and shining; one of the hardiest of the Privets and distinct.

California (L. ovalifolium)—Of great value as a hedge, and of such positive beauty as to be attractive when grouped with other shrubs. When planted singly it forms a very compact, dense, upright shrub, of medium size. The leaves are so glossy as to have the appearance of having been freshly varnished. The foliage hangs on until late in the winter, making it nearly evergreen.

RHODOTYPUS (White Kerria).

Kerroides—A choice and rare Japanese shrub. It is a slender-branched bush, with very pretty, deeply veined leaves,



HEDGES OF CALIFORNIA PRIVET.

and pure white flowers, borne at intervals all summer.

SNOWBALL (Viburnum).

Common (Sterilis)—The well-known sort, and a general favorite on account of its large clusters of white flowers in June.

High, or Bush Cranberry (Opulus)—Red berries resembling cranberries.

Dentatum (Arrow-Wood)—Glossy, handsome leaves, white flowers, and fine, steel-blue berries in fall.

Japan (Plicatum)—A beautiful species from Japan, surpassing the Common Snowball in many respects, as its habit is much better; foliage handsomer, flowers whiter and more delicate.

Tomentosum (Single Japan Snowball)—Foliage resembles the Japan Snowball; flowers white, in flat racemes and in great profusion.

STEPHANANDRA.

Flexuosa—A handsome, graceful shrub with spreading, drooping branches and elegant foliage. Bears pure white flowers in June. In Autumn the foliage takes on handsome purplish coloring.

STRAWBERRY OR SPINDLE TREE (Euonymus).

A showy shrub. Its chief beauty consists in its red berries, hanging in graceful clusters from the end of the branches until midwinter. 6 to 8 feet.

SYRINGA OR MOCK ORANGE (Philadelphus).

Garland (Ph. Coronarius)—A well known hardy shrub. White, fragrant flowers. Blooms in June. Makes a large shrub.

Golden-Leaved (Ph. Foliis aureis)—A small shrub of striking beauty. The foliage is golden yellow, and retains its lovely color through the entire season. White flowers. Blooms in June. Very hardy.

Large-Flowered (Grandiflorus)—A desirable sort.

SPIREA.

Anthony Waterer—A new dwarf compact-growing shrub. Blossoms in broad flat heads of beautiful deep red color. A perpetual bloomer.

Aurea—The leaves are bordered with golden yellow, particularly in June, when the branches are covered with small double white flowers.

Billardi—Blooms nearly all summer; rose colored; fine; showy.

Callosa—Desirable because it blooms nearly all summer. The flowers are rose-colored, borne in panicles. A very free grower.

Douglass (S. Douglasii)—Spikes of rose colored flowers in July and August.

Golden-Leaved (opulifolia aurea)—Variety with golden yellow foliage, and tinted flowers in June. Strong grower.

Reevesi—Narrow, pointed leaves. The flowers are white, quite large, and borne in clusters, entirely covering the whole plant. Blooms in June.

Thunbergs' (Thunbergii)—A Japanese species of small size, with narrow linear leaves and small white flowers; one of the best.

Van Houttei—The finest of all Spiræas, a most charming and beautiful shrub; having pure white flowers in clusters. Extraordinarily profuse in bloom, and the plant is a vigorous grower and very hardy.

SUMAC (Rhus).

Copallina (Shining Sumach)—Foliage a lustrous green in Summer, changing to a rich crimson in the Autumn. Greenish yellow flowers in August.

Fern-Leaved (Laciniata)—A hardy plant with beautiful fern-like leaves, milky white on under side, changing to a brilliant scarlet in autumn.

GARLAND SYRINGA (Page 32)

Staghorn (R. typhina)—A large shrub or tree, brilliant foliage and scarlet fruit in autumn.

SYMPHORICARPUS. (St. Peter's Wort or Waxberry).

Racemosus (Snowberry)—A well known shrub with small, pink flowers and large, white berries that hang on the plant through part of the winter.

Vulgaris—Red-fruited or Indian currant. A shrub of very pretty habit. Foliage, flowers and fruit small; fruit purple and hangs all winter.

TAMARIX

Of great value for planting by the seaside.

African (Africana)—Thrives in any soil. The foliage is handsome. The flowers are small, borne in spikes in May. Its habits are upright.

Chinensis—A vigorous upright grower, delicate light green foliage, flowers rose colored, in September.

WEIGELA (Diervilla).

Of Japanese origin, producing in June and July superb large trumpet-shaped flowers, of various colors, from the purest white to the richest red; very ornamental in the fall.

Candida (white)—It is of vigorous habit, an erect grower becoming in time a large-sized shrub; flowers pure white and produced in great profusion in June; plants continue to bloom during summer.

Rosea—The best known sort. From China. Rose-colored, trumpet-shaped flowers. Blooms in June. 4 to 6 feet.

Variegated-Leaved (Foliis variegatis)—Leaves bordered with yellowish white, making the bush very conspicuous the entire season. Pink flowers blooming in June. A very desirable bush.

CLIMBING AND TRAILING SHRUBS.

Ornamentals of this class are so hardy, so easily grown, and so beautiful, that they deserve great attention.

AKEBIA.

Canadensis Quinata—A singular Japanese climbing shrub, with fine foliage, purple flowers and ornamental fruit.

AMPELOPSIS.

American Ivy, or **Virginia Creeper** (A. quinquefolia)—Also called Woodbine. A very rapid grower, having beautiful, dark green foliage; assumes rich crimson hues in autumn.

Veitchii, or **Boston Ivy**—Leaves a little smaller and more ivy like in form than the foregoing. Overlapping each other, they form a dense sheet of green. The plant requires a little protection the first winter until it is established, but after that it may be safely left to care for itself. It grows rapidly and clings to the surface of even a painted brick wall with great tenacity. The foliage changes to crimson scarlet in autumn.

ARISTOLOCHIA (Dutchman's Pipe).

Sipho—A rapid growing vine, with magnificent foliage, ten to twelve inches in diameter, and curious pipe-shaped, yellowish-brown flowers.

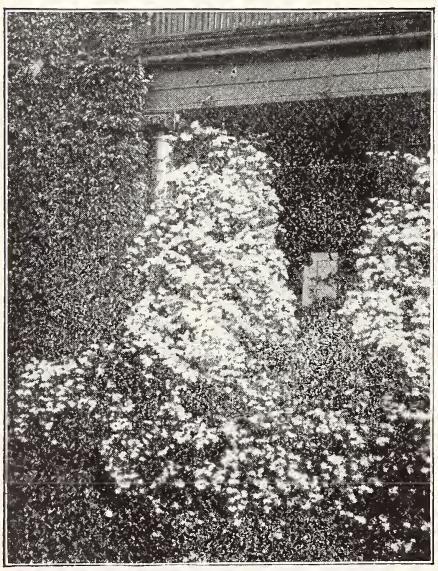
BIGNONIA, OR TRUMPET FLOWER.

Radicans—A vigorous and hardy climber, with clusters of scarlet, trumpet-shaped flowers in August.

Grandiflora (New)—Leaves thick and shining, and immense blossoms of gorgeous crimson and yellow.

CELASTRUS.

Scandens (Bitter Sweet)—One of our native climbing plants of rapid growth, with attractive light green foliage and yellow flowers during June, which are followed in the Autumn with bright orange fruit.



CLEMATIS AND AMPELOPSIS.

CHINESE MATRIMONY VINE (Lycium Sinensis).

A vigorous climber, covered with bright purple, star-shaped flowers, succeeded by brilliant scarlet berries. Flowers and fruit continue forming throughout summer. Of the easiest culture, thrives everywhere and in any soil.

CLEMATIS.

The finer varieties of clematis are today the most showy and effective of all the hardy flowering climbing vines known, so far as richness of color and elegance of form of the flower is concerned. They are peculiarly adapted for covering pillars, trellises, walls, fences, rocks, etc., their exceedingly rapid growth rendering them especially valuable for hiding from view any unsightly object. They are equally efficient when used as a bedding plant, covering a bed very quickly if pegged down occasionally.

C. Coccinea—A bell-shape heavy petaled flower, borne in profusion for a long season, color bright scarlet.

Duchess of Edinburgh—The best of the double pure whites. Deliciously scented.

Crispa—Flowers blue, with center of petals an opaque white; fragrant.

C. Henryi—Fine bloomer; flowers large, of a beautiful creamy white, consisting generally of from six to eight sepals. June to October.

C. Jackmanni—One of the most popular varieties. It is a strong grower and produces a mass of intense violet purple flowers from June to October.

C. Madame Edward Andre—Flowers large, of a beautiful bright velvety red, very free flowering and continuous bloomer.

C. Paniculata—From Japan. A luxuriant grower, profuse bloomer, with fine foliage. Flowers of medium size and fragrant, produced in the greatest profusion in late summer.

C. Ramona—A strong, rampant grower, and very hardy. It is a free and perpetual blooming variety; the color of the flower is a deep sky-blue, and larger than any variety.

C. Virginiana—American white. A remarkably rapid climbing plant growing to the height of 20 feet and producing a profusion of flowers in August.

HONEYSUCKLE (Lonicera).

L. Canadian—A robust, rapid grower, with glaucous leaves and yellow flowers.

Chinese Twining (L. Japonica)—A well-known vine holding its foliage nearly all winter. Blooms in July and September and is very sweet.

Hall's New Japan (Halleana)—An almost evergreen variety, with pure white flowers, changing to yellow; very fragrant and a vigorous grower. Covered with flowers from July to December.

Golden-Leaved (Aurea Reticulata)—Moderately strong grower, with leaves veined and spotted with bright golden yellow.

Monthly Fragrant (Belgica)—Flowers red and pale yellow; sweet scented; blooms through the summer.

Scarlet Trumpet Monthly (Sempervirens)—Flowers deep red, trumpet-shaped flowers all Summer.

IVY (Hedera).

The evergreen Ivies often suffer in winter if exposed to the sun, and should therefore, be planted on the north side of the wall or building.

H. canariensis or **hibernica** (Irish ivy)—The well known sort used in covering the north side of buildings, leaves deep green.

English (H. Helix)—A well-known old and popular sort.

PASSIFLORA.

Incarnata (Passion flower)—A perennial dying to the ground in Winter and reappearing in Spring. Not hardy in the north.

PUERARIA THUNBERGIANA (Kudzu Vine).

Kudzu Vine—The most rapid growing vine in cultivation. Its foliage is large and furnishes dense shade; it bears small racemes of rosy purple, pea shaped blossoms towards the close of August.

TRUMPET VINE (Radicans).

A splendid climber, vigorous and hardy, with clusters of large, trumpet-shaped scarlet flowers in August.

WISTARIA.

Chinese Purple (W. sinensis)—One of the most elegant of climbing vines and a rapid grower. Bears long clusters of pale blue flowers in May and June, and also in September. Extremely hardy.

Chinese White (W. var. c. alba)—Habit of growth similar to Chinese Purple, but the flowers are somewhat smaller and pure white. Blooms in June and September.

HEDGE PLANTS.

Evergreens must be handled with care; the roots should not be allowed to dry out. Plants for hedges should be placed about twelve inches apart, more space being allowed for larger plants. California Privet, Honey Locust and Osage Orange are generally planted in double rows about nine inches apart. Other deciduous shrubs for hedges should be planted about twelve inches apart.

We recommend Evergreens like the *American* and *Siberian Arbor Vitæ*, *Norway Spruce*, *Austrian* and *Scotch Pines*, and many of the Deciduous and Evergreen shrubs, such as the *California Privet*, *Berberis Thunbergii*, *Rosa Rugosa*, *Japan Quince*, *Tamarix*, *Deutzias*, *Spiræas*, *Mahonia*, *etc.*, and for defensive hedges, the *Buckthorn*, *Honey Locust* and *Osage Orange*.

EVERGREEN HEDGE PLANTS.

Arbor Vitæ, American
" " Siberian
Mahonia aquifolia
Norway Spruce
Pine, Austrian
" Scotch
Tree Box, in variety
Dwarf Box

DECIDUOUS HEDGE PLANTS.

Berberis Thunbergii
Buckthorn
Honey Locust
Japan Quince
Osage Orange
Privet, California
Rosa rugosa
Spireas
Tamarix
Thorn, coccinea
" crus galli

ROSES.

Roses succeed best in a deep, rich, clay loam soil. In making a rose bed, prepare the soil as follows: If in the lawn, and the ground is sodded over, remove the sod, if the ground is a stiff clay, to the depth of four inches, spade up the ground to the depth of 15 inches thoroughly, then prepare a compost as follows: Two parts of leaf mold, one part sandy soil, or leached ashes, one part good, well-rotted cow manure. Mix these thoroughly together and place six inches deep of this mixture on top of the bed. Spade it in thoroughly, mixing into the ground. If the ground is sandy use the same amount of clay loam and cow manure. If it is a clay loam use leaf mold two parts, and cow manure one part, and proceed the same as above; if it is a muck and the ground is well drained, use a liberal amount of well-rotted cow or horse manure. The manure must be well rotted and mixed thoroughly through the soil.

How to Plant—Place new stock in soft water twenty-four hours before setting; prune off all the broken roots. Plant 2½ feet apart. If set in rose beds 2 feet; in hedge, if set two rows side by side, 2½ by 3½ feet. When setting be careful to straighten out the roots and press the dirt well around them with foot or hands. Set them as deep as they grow in the nursery. You can tell by the dark earth-line on the rose stalk. Budded roses should be set with the bud 4 inches under the ground. After setting, cut the tops off the weak plants 6 inches from the ground, and the strong plants 8 inches, either fall or spring setting. If it is in the spring cover the top of the bed 1½ inches deep with good rotted manure. If it is a fall set, after cutting the tops off, hoe the dirt up around the stalk three or four inches, and before cold weather sets in, or about the time, hoe the dirt around them clear up to the top, and press around the plants, then cover three or four inches deep with good horse manure from the stable, which should have plenty of straw in it; leave this on all winter. When spring comes in March or April, owing to the earliness of the spring, remove all the manure and level up your bed; put two inches of this manure on top of your rose bed, shaking out all the straw; dig this into the ground with manure fork.

HYBRID PERPETUAL ROSES.

Alfred Colomb—Bright carmine red; clear color, large, deeply built form; exceedingly fine.

American Beauty—The flowers are a deep crimson color, of very large size, and the most fragrant of its class. It is a continuous bloomer. Should be protected in winter.

Anne de Diesbach—Brilliant, crimson, sometimes shaded with bright maroon. A superb garden sort; fragrant; one of the hardiest and best.

Baronne de Bonstetten—Rich, dark red, passing to velvety maroon, highly fragrant. Very double.

Baroness Rothschild—Light pink, cupped form, very symmetrical, without fragrance, very beautiful. A moderate grower only.

Charles Lefebvre—Reddish crimson, velvety and rich; large and full. A splendid rose.

Coquette des Alpes—Stronger in growth and larger in flower than any of the other Hybrid Noisettes. The blooms are of medium size, white slightly tinted with rose on the edges of the petals.

Captain Hayward—Bright crimson carmine, an entirely distinct shade of color. Flowers of perfect form, and very sweet.

Clio—The flower is perfection in form, with fine broad petals; color delicately satiny blush, with a light shading of rosy-pink at the center.

Countess of Oxford—Bright carmine red; very large; fine form.

Duke of Edinburgh—Very bright vermillion; large and full.

Eugenie Verdier—Beautiful silvery pink, tinged with fawn; large, full, finely formed; exquisite buds.

Fisher Holmes—Deep, glowing crimson; large, moderately full, and of fine imbricated form. A superb rose.

Francois Levet—Cherry red; medium size, well-formed; very free bloomer.

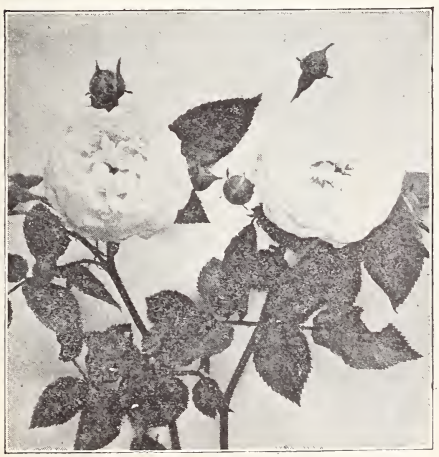
Frau Karl Druschki—This new hardy Rose is of German origin, and has won many prizes and made many friends. It is unquestionably the ideal hardy white rose. Its flowers, which are very large, are perfect in form and snow-white in color, with large shell-shaped petals, forming a beautiful flower.

Francois Michelon—Brilliant carmine; shaded with crimson; very large, full and of fine globular form; very fragrant and a free bloomer, late in June and July.

FRAU KARL DRUSCHKI.

General Jacqueminot—Brilliant crimson, large and very fine, one of the handsomest and most showy roses of this color. Beautiful in the bud; semi-double when full blown. Of fine free growth; a universal favorite.

Gloire Lyonnaise—White, tinted yellow; large, moderately full, resembles a Tea Rose in form and fragrance.



CLOTHILDE SOUPERT.

Gloire de Margottin—Brilliant scarlet; large, semi-double, globular, of good shape; fragrant. The brightest Rose yet raised.

Harrison's Yellow (Austrian)—Bright yellow.

Hugh Dickson (New)—Intense brilliant crimson shaded scarlet, with large, smooth petals, slightly cupped. Vigorous growth.

John Hopper—Rose, with rosy crimson center; splendid form. Standard sort.

Jules Margottin—Light, brilliant crimson; large, full and beautiful.

Lady Helen Stewart—Bright crimson scarlet; large, full and of perfect form, produced on long, stiff stems, highly perfumed.

ANNE DIESBACH.

La France—Delicate silvery rose; very large and full; an almost constant blooomer; a moderate grower; semi-hardy.

Louis Van Houtte—Beautiful maroon; medium size; full, of fine shape; deliciously perfumed.

Madam Caroline Testout—Silvery rose, flowers large, double.

Mabel Morrison—White, sometimes tinged with blush; in the Autumn the edges of the petals are often pink.

Madame Gabriel Luizet—A magnificent pink rose; very large, and possesses a

MADAM GABRIEL LUIZET.

pleasing fragrance. Known as Hardy LaFrance which it resembles.

Madame Plantier (Hybrid China)—Pure white, above medium size. One of the best white roses for hedges and for massing in groups.

Magna Charta—Bright pink, suffused with carmine; very large, full and fragrant, with magnificent foliage. A free bloomer.

Marchioness of Londonderry—A new white rose. Flowers of great size, perfectly formed on stout stems. Color ivory white; free blooming; perfumed.

Margaret Dickson—Of magnificent form; white, with pale flesh center; petals very large, shell shaped, and of great substance; fragrant, a fine variety; foliage very large, dark green.

Marchioness of Lorne—Large, full, cupped shape; buds long and handsome, rich rose color, shaded with vivid carmine.

Marshall P. Wilder—Cherry carmine; continues in bloom long after other varieties are out of flower; the finest H. P. rose yet produced.

Mrs. John Laing—Soft pink; large and of fine form, produced on strong stems; exceedingly fragrant; one of the most valuable varieties for forcing, and flowers continuously in the open ground. The most beautiful rose of recent introduction.

Paul Neyron—Deep rose color; good foliage; by far the largest variety in cultivation.

Persian Yellow (Austrian)—Deep golden yellow; double and fine.

Pierre Notting—Deep velvety crimson. A beautiful globular-shaped flower, distinct and fine.

Prince Camille de Rohan—Deep velvety crimson, large, moderately full. A splendid rose.

Soleil D'Or (Golden Sun)—The flowers are large, full and globular, fragrant; buds conical shaped; color superb, varying from gold and orange-yellow to reddish-gold, shaded with nasturtium red.

Ulrich Brunner—Brilliant cherry red, a very effective color; flowers of fine form and finish, carried well upon the plant; petals of great substance; plant vigorous, hardy and resists mildew. One of the best varieties for forcing and open air culture.

Vick's Caprice—A strong-growing variety, with petals beautifully striped pink and white; a decided novelty.

Victor Verdier—Clear rose, globular, fine form and free bloomer, superb.

EARL OF DUFFERIN.

R. G. SHERMAN CRAWFORD

MRS. JOHN LAING.

PAUL NEYRON

CLIMBING ROSES.

These are all hardy, vigorous growers, and bloom freely in June.

Baltimore Belle—Fine white with blush center; very full and double.

Climbing Clothilde Soupert—A strong growing, climbing sport of Clothilde Soupert.

CRIMSON RAMBLER.

Crimson Rambler—As a climbing or running rose it has no equal. The foliage is rich, dark green, the growth rapid and diverse, but its great beauty is when the plant is covered with a profusion of the brightest crimson partly doubled flowers which remain on a long time.

Dawson—A vigorous hardy plant with a tendency to climb high. Flowers are clustered, quite full, of a deep pink color and very fragrant.

Dorothy Perkins—A splendid new, shell-pink Climbing Rose. The flowers are borne in clusters of 30 or 40 and sometimes even 50 to 60. The flowers are large, very double, sweetly scented and of a beautiful shell pink. Hardy.

Hiawatha—A new rambling variety of great beauty, bearing large trusses of single deep crimson flowers, shading to almost white in the center, with rich golden yellow anthers. A vigorous grower and a decided acquisition to this class.

Lady Gay—The flowers are of a delicate cherry-pink color, which fade to a soft white. The effect of a plant in full bloom, with the combination of the soft white flowers, the cherry-pink buds, and the deep green foliage, is indeed most charming.

Philadelphia Rambler—Improvement on the Crimson Rambler, flowers being larger, much more double and of a lighter crimson color.

Pink Rambler (Euphrosyne)—Possesses the same valuable features found in the White Rambler, with which it differs only in color of flower, which is a brilliant light carmine.

Queen of the Prairie—Bright rose color; large, compact, and globular; a very profuse bloomer. One of the best.

Tausendschon, or Thousand Beauty—The flowers are the most delicate shade of pink ever seen in a Rose, might be described as a white delicately flushed pink changing to rosy-carmine. It gets its name from its many flowers and the variation in colorings.

White Rambler (Thalia)—Flowers are the size of a silver quarter, perfectly filled, very fragrant. Color pure white; sometimes tinged with blush. Blooms in clusters.

DOROTHY PERKINS.

Yellow Rambler (Aglaia)—A new climbing rose of the class and habit of the famous crimson rambler; flowers medium size, cup shape, nearly full, sweet scented; blooms in large clusters; color very light yellow.

Wedding Bells—The most floriferous Rose yet produced. The color is white with the upper part of the petals soft-pink.

MOSS ROSES.

Blanche Moreau—Pure white, large; form very perfect; flowers in clusters, heavily massed. A rampant grower.

CRESTED MOSS.

Crested Moss—Deep pink colored buds, surrounded with a mossy fringe and crest. A fragrant, very beautiful Rose.

Pink, Moss—Free bloomer. Pale rose, very beautiful buds; a great favorite.

White Bath—Moderate bloomer. White sometimes tinged with flesh; attractive in bud and open flower. The best white moss.

Gracilis—Free bloomer. Deep pink buds, surrounded with delicate fringe-like moss. The most beautiful of all the moss roses.

EVER-BLOOMING TENDER ROSES.

Bridesmaid—Pink, rich color.

HYBRID TEA ROSES.

American Beauty—A beautiful rose for forcing under glass. Not recommended for out-door culture.

Augustine Guinoiseau—Flowers white, slightly tinged with flesh. Sometimes called White La France.

Balduin (Helen Gould)—Bright glowing carmine; the bud is long and pointed; as sweet as a June rose.

Belle Siebrecht—The flowers are large, full and double; the buds are long and pointed. The color is a brilliant, rich, deep pink.

Captain Christy—Flesh color, deepening toward the center; medium size, full. Ill-shaped flowers are not uncommon, but when the flowers are perfect, there are none more admirable.

Duchess of Albany—A rich, deep, even pink tint; free blooming and fragrant.

Etoile de France—A new French variety; flowers full and double. In color it is a rich, velvety crimson, with vivid cerise-red center.

Gruss an Teplitz—One of the brightest colored Roses grown. Dark rich crimson, changing to bright scarlet, shading to velvety fiery red. Delightfully fragrant.

Kaiserin Augusta Victoria—A superb white Rose, faintly tinted with cream and lemon-yellow. Large, full and double; their fragrance is peculiarly rich and delightful.

Killarney—Its color is a sparkling, brilliant pink. The blooms are large, the buds long and pointed; a Rose of unusual excellence.

LA FRANCE.

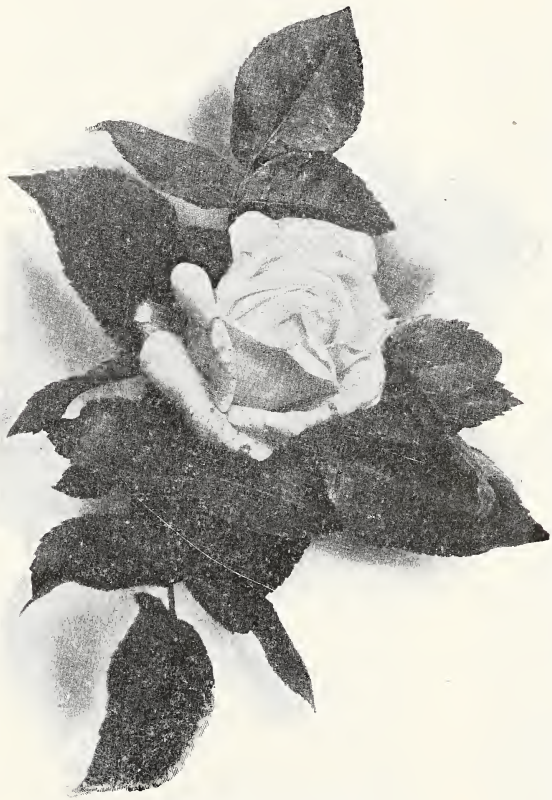
La France—Delicate silvery rose, changing to silvery pink; very large; full, of fine globular form; a most constant bloomer.

Madame Caroline Testout—Flowers large, very double; silvery rose; free bloomer.

Maman Cochet—Color deep rose-pink, inner side of petals silvery-rose; borne on long, stiff stems· very double and exquisite when in bud.

Richmond—A most valuable variety of brilliant crimson-scarlet. Very free-flowering.

White Maman Cochet—Identical with Maman Cochet, except in color; an ideal bedding variety.



MARGARET DICKSON.

RUGOSA ROSES AND HYBRIDS.

For massing or hedge planting, the Rugosas cannot be excelled. The hybrids are attractive in the garden.

Rosa Rugosa—An upright shrub, attaining 5 to 6 feet in height. Foliage shining dark green, deeply plicated; flowers single, red, fragrant and produced freely from June to December; fruit bright crimson-scarlet.

Alba—The habit and foliage is similar to the above, but the flowers are pure white, single and as attractive in the bud as when open; quite fragrant.

Conradi Ferdinand Meyer—This variety is a strong, robust grower; with stout stems. The flower is clear silvery rose, very large and double; delightfully fragrant.

Mme. George Bruant—This is a very free-blooming, white variety; a strong grower and blooms continuously; flowers semi-double.

NEW DWARF BEDDING ROSES OR BABY RAMBLERS.

A type of Rose which is becoming very popular for bedding purposes. They form shapely, compact, bushy specimens, about 18 inches high, producing in great profusion from early in the season until severe frost, immense trusses of small flowers.

Crimson Baby Rambler (Mme. Norbert Levasseur)—Crimson flowers similar to the popular Climbing Crimson Rambler.

Pink Baby Rambler (Anchen Muller)—Brilliant, luminous pink; a shade that is always admired.

White Baby Rambler (Katherina Zeimet)—Pure white flowers, showing the yellow stamens very prettily, produced in large candelabra-shaped trusses.

WICHURIANA AND ITS HYBRIDS.

Rosa Wichuriana (Memorial Rose)—A beautiful creeping species. It grows very fast, and has small, dark, shining leaves that soon cover the ground thickly. The flowers are small, white, single and fragrant.

Evergreen Gem—Flowers yellow, buff in the bud, opening almost white, of good size, perfectly double; quite fragrant, produced singly on the stem.

Gardenia—The flowers are produced singly on fine stems, are large, and shaped like a Gardenia. In bud form they are bright yellow, but open a rich cream-color and exhale a delightful fragrance.

TRANSPLANTING TREES AND SHRUBS.

TREES AS THEY ARE RECEIVED FROM THE NURSERY.

Preparing the Trees.—In removing the tree in the nursery row, no matter how carefully the work is done a portion of the roots are broken and the balance that existed in the tree is destroyed. To make up for this, remove the broken or mutilated portions so as to leave the ends round and smooth. Never plant a tree exactly as it is received from the nursery until it has been thoroughly examined and the necessary pruning done. Proper pruning is determined by the size, form and condition of the tree.

Standard Orchard Trees.—These trees when they leave the nursery vary from five to seven feet in height. The branches that form the head should be cut back to within three or four buds of the base. Prune the roots also as directed above. With older trees, of extra size, shorten all the previous year's growth to within three or four buds of their base; also cut away the unnecessary branches if they are numerous.

Dwarf Trees.—Trees of two or three years' growth and having a number of side branches should be pruned with an eye to the growth and the form desired. Cut the branches into the form of a pyramid by shortening the lower ones about one-half, those in the middle still shorter and the uppermost ones to within three or four buds of their base. The leader should be cut back about one-half. Closer pruning is needed on trees that have been dried or injured by exposure.

Yearling Trees Intended for Pyramids.—Cut away the smallest side branches if there are any, keeping the strongest and best placed. Those having no side branches should be cut back far enough to assure the production of branches within a foot of the ground. A strong yearling about four to six feet in height may be cut back about half, weaker ones more than that. Cut too low rather than not low enough.

Preparing the Soil.—Fruit trees flourish best in a naturally dry soil; too much moisture retards growth. Plow at least twice, following the common plow

PAIRS OF TREES SHOWING THEM AS RECEIVED FROM THE NURSERY AND AFTER BEING PRUNED FOR PLANTING. 1 KIEFFER PEAR; 2 PEACH; 3 DWARF DUCHESS; 4 QUINCE.

the second time with the subsoil plow. Fresh lands will not need manure or fertilizers but lands exhausted through constant cropping should be fertilized either by turning under clover or well decomposed manure or compost. Land that is in good condition for wheat, corn or potatoes will be well adapted to fruit trees.

Planting.—Dig the hole larger than is necessary to admit all the roots in their natural position, keeping the surface soil and subsoil separate. Have the tree held in an upright position while the earth is shovelled in, the best soil being sifted in among the roots. Make sure that all the roots come in contact with the soil. When the earth is nearly filled in, pour in water to wash the soil around the roots; then fill up the remainder and tread down gently with the foot. It is only necessary to use water in dry weather.

Don't plant too deep; the trees should stand about the way they did in the nursery. Trees on dwarf stock should be planted so that all the stock is below the ground, only the graft appearing above the surface.

Staking.—Extra tall trees or those much exposed to the wind should be supported by a stake. Take care that no chafing of the tender bark occurs.

Mulching.—After the tree is set, cover the ground within a radius of two to three feet with five or six inches of manure or litter. This mulching is necessary in dry ground and is good practice in spring and fall planting.

Pruning.—All fruit trees require more or less pruning from year to year. While the tree is young the head should be formed, and unnecessary branches taken out. The best time to prune is late in the winter or in early spring, when no more severe weather is anticipated.

Carrying Stock through the Winter.—The practice of procuring supplies of trees in the fall is becoming more and more general. It is a more favorable time than spring, because the stock has just entered into dormant condition. Even when fall planting is not desirable by reason of severity of the climate, the stock may be procured in the fall, and thus be on hand ready for the opportune moment in the spring.

To insure success you have only to get the trees before freezing weather, and bury them in the following manner: Choose a dry spot where no water will stand during the winter, with no grass near it to invite mice. Dig a trench, throwing out enough dirt to admit one layer of roots below the surface, and place the trees in it, inclined at an angle of forty-five degrees or more. Widen the trench, throwing the soil among the roots in position, place another layer in the trench, reclining the tops on the others, and so on until all are in the trench; then finish by throwing up more soil until the tips of the trees are nearly or quite covered. It is also well to bank up the earth around the sides to insure more thorough protection. The exposed tops should then be covered with pine boughs, which insures them against any possibility of injury. Care should be taken to fill solid all the interstices among the roots. Too much care in doing this cannot be insisted upon, as every root which is not in close contact with the soil is sure to be killed. In the spring the trees will be on hand for transplanting at the earliest moment possible to do the work.

Care of Stock Injured by Frost or Long Exposure.—Place the unopened packages in a cellar or any cool place that is free from frost. Leave them there until the stock is thawed out. It can then be unpacked and planted or "heeled in."

If dried out from long exposure, bury in the ground, or soak in water from 12 to 24 hours. Prune such stock more closely than ordinarily.

SPRAYING.

Once a plant is attacked by disease it cannot be cured in the same sense that an animal can be. Spraying aims not to cure diseased plants but to protect them from two classes of enemies, insects and fungus (fungi, plural). The purpose of spraying is then to render plants immune against the insects or fungi to be feared. The spray mixture must be injurious to the enemies it is designed to forestall.

There are three main considerations in spraying: An effective spraying machine, one adapted to the character of the work; a mixture that will defeat the enemy; and a knowledge of the proper time to spray. The first can be secured through the manufacturers whose advertisements appear in fruit-growing magazines, the other two are explained in detail in the following paragraphs.

The principle underlying spraying is to cover the foliage or wood of plants with a medium in which the fungus will not grow, in the case of the plant parasite, or one which will poison the leaf-eating insect or kill the sucking insect by destroying its

body. Both diseases and destructive insects work rapidly and a delay of a few days may make the remedy ineffective. Of all factors making for success in spraying promptness is the most important.

We advise careful attention to these five points: (1) Know the enemy you are attacking; (2) study the remedy, its principles—how it acts; (3) secure the proper appliance for using the remedy; (4) prepare the spray mixture carefully; (5) apply it thoroughly.

Ammoniacal Copper Carbonate

Copper Carbonate	5 ounces
Ammonia	2 quarts
Water	50 gallons

Prepare and keep in large bottles.

Arsenite of Lead

Lead Arsenite	1 pound
Water	150 gallons

Arsenite of Lime

This is much cheaper than Paris Green and equally efficient. It will not burn the tenderest foliage.

Formula (for 800 gallons)

Arsenic, White	2 pounds
Sal Soda	8 pounds
Water	2 gallons

Boil all together for 15 minutes or as long as it takes the arsenic to dissolve. The result is a concentrated solution that can be diluted as needed. One pint together with 2 pounds of lime added to a barrel of water makes an insecticide as good as Paris Green.

Bordeaux Mixture (Standard formula):

Copper sulphate (Blue Vitriol)	4 pounds
Lime (fresh)	4 pounds
Water	50 gallons

Use about half of the water to dissolve the Copper sulphate. Do this by suspending the crystals near the surface in a bag of coarse material. Put the lime in another vessel, adding small amounts of water from time to time until the lime is thoroughly slaked. Then add the remainder of the fifty gallons (about 25 will have been used for the copper sulphate, 1 or 2 for slaking the lime; use the remainder—23 or 24 gallons—for diluting lime).

Have a large vessel capable of holding fifty gallons and into this pour at the same time, the lime solution and the copper sulphate solution. The spray tank or barrel may be used for this purpose. The best mixture is made by straining the solutions as they are poured. This can be done either with a coarse cloth or fine-meshed wire screen.

Copper Sulphate Solution

Copper sulphate	1 pound
Water	25 gallons

Since this is injurious to foliage it should only be used before the foliage appears. It acts as a general germicide and disinfectant.

Hellebore

White Hellebore, fresh	1 ounce
Water	3 gallons

Kerosene Emulsion

Hard Soap	½ pound
Water, boiling	1 gallon
Kerosene	2 gallons

First dissolve the soap in hot water, add the kerosene and stir or churn thoroughly until the mixture becomes white and creamy. Dilute this solution four times for San Jose; twenty times for Aphis.

Lime-Sulphur

The lime-sulphur solution seems destined to take the place of the Bordeaux mixture and many other copper sprays that have been in use a long time.

(For the best information about Lime-Sulphur send for Penn. Expt. Sta. Bulletin 92, July 1909; or their latest bulletin on the subject.)

Lime, fresh	15–20 pounds
Sulphur, flowers	15 pounds
Water	50 gallons

Place lime in an iron kettle over fire and slake with about 8–10 gallons of water. Add the sulphur and salt then thoroughly. Boil the mixture for from forty to sixty minutes and stir constantly. Do not add any more water than is needed to keep the mixture from sticking and burning. Strain the mixture and add enough hot water to make 50 gallons. Always apply hot! After the mixture has been allowed to cool crystals form which can only be dissolved by heating.

Before using Lime-Sulphur we advise a thorough understanding of it. This can be obtained from the bulletins of numerous Experiment Stations and from fruit-growing magazines.

Paris Green Solution

Mix 1 pound of Paris Green in 200 gallons of water; stir well and keep well stirred while it is being applied.

Soluble Oils

These require only the addition of water before applying. Use only those recommended by good authority. They take the place of Lime-Sulphur and have not its disadvantages.

Tobacco Solutions

These can be prepared by boiling tobacco stems in water, two gallons to each pound of stems. Good for sucking insects.

Commercial solutions can be obtained. Use according to directions accompanying them.

Grafting Wax

A good grafting wax is made as follows: Resin, 4 parts; Bees' Wax, 2 parts; Tallow, 1 part. All by weight. This material should be carefully melted together, mixed, and when hot, poured into a pail of cold water. As soon as it is hard enough to handle, the lump should be pulled until it becomes light colored. In doing this the hands should be greased, care being taken not to use too much grease. When first taken from the water, the mixture will be a spongy mass. Unless the resin is thoroughly melted, the wax will be lumpy.

Government Publications.

Write the "Superintendent of Documents, Washington, D. C." for a list of the publications issued by the Government. The prices and directions for securing any of the publications listed are given therein.

College and Experiment Station Literature.

Write the Mailing Clerk or Extension Department of any agricultural college for their bulletin on the subject desired and it will be sent, if still in print. The same holds true of Experiment Stations which are often in connection with the colleges.

Table of Distances for Planting Trees.

Apples. Standard, 30 to 40 feet each way
Apples. Dwarf, 15 ft. each way.
Pears. Standard, 20 to 25 ft. each way.
Pears. Dwarf, 15 ft. each way.
Cherries. 18 to 20 ft. each way.
Plums. 16 to 18 ft. each way.
Peaches. 16 to 18 ft. each way.
Apricots. 16 to 18 ft. each way.
Nectarines. 16 to 18 ft. each way.
Quinces. 12 ft. each way.
Currants. 3 to 4 ft. each way.
Gooseberries. 3 to 4 ft. each way.
Raspberries—3 to 4 ft. each way.
Blackberries. 6 to 8 ft. each way.
Strawberries. 1½ ft. to 3 ft. each way.
Grapes. 8 to 10 ft. each way.

SPRAY CALENDAR

Prepared specially for this catalogue.

Plant	Insects or Diseases	Remedy	First Application	Second Application	Third Application	Remarks
Apple	Blackspot Canker	Bordeaux, double strength	Immediately after leaves fall	Three weeks later		
Apple °	Bud Moth	Lime-Sulphur	Just as buds are swelling	Arsenate of lead twice as buds open, once after petals fall		A fourth application will pay. If bitter rot is present, a fifth application should be made
Apple ‡	Codling Moth and Scab	Paris Green, 1 lb. to 100 gallons of water.	Within one week after blossoms fall.	Week or ten days.	Two weeks later	
Apple	Curculio. See Plum	Arsenate of Lead	After blossoms fall	Repeat in ten days	10 days later	
Apple	Flathead Borer	Dig out worms in fall and spring with knife. During growing season whitewash base of trunk or apply Carbon Bisulphide				
Apple †	Green Aphis	Lime-Sulphur	When the leaves are off the tree	Kerosene emulsion is effective when insects appear. Repeat before the leaves curl if necessary. Cutting off twigs covered with eggs in winter usually suffices for young trees.		
Apple	San Jose Scale	Lime-Sulphur or soluble oils as recommended	Early in November	In the spring before the buds burst	San Jose scale cannot be destroyed in one treatment. If only a few trees of an orchard are effected, burn them off.	
Apple °	Twig Borer	Lime-Sulphur	When buds swell in spring	Arsenate of lead in summer when the worms appear		
Apple	Woolly Aphis, Oyster Shell and Scurfy Scale	Soluble oils as recommended Kerosene emulsion, 1 part to 12 parts water	Use when young first hatch in early spring	Repeat in ten days	For summer treatment, use 10 per cent. kerosene or dilute Lime-Sulphur	If Woolly Aphis is present on roots, dip stock in 1–15 solution of recommended prepared oil compound, applied May to August or remove the soil and treat with finely ground tobacco placed around base of tree; use 2 to 5 lbs. to a tree.
Cherry *	Black Aphis	Kerosene emulsion or whale-oil soap. Soluble oils as recommended	When the insects appear and before they curl the leaves	Bordeaux when fruit has set	Just as fruit begins to ripen, with copper acetate. 8 oz. to 50 gals. water.	
Cherry † *	Brown Rot	Bordeaux	Just before blossoms open	After the blossoms fall	Before first spraying, gather and burn mumified fruits. Thin green fruit till they are separate. Prune trees so as to admit much sunlight.	
Cherry ‡	Slug	Arsenate of lead. Paris Green or dust with lime, road dust or ashes When the insects appear				
Currant	Aphis	10 per cent. Kerosene emulsion	Early before leaves roll	Ten days later, Hellebore for worms; quassia and tobacco for Aphis. Repeat second time when necessary		Watch the plants closely in spring and begin spraying as soon as worms are discovered. Other currant pests removed by cutting out and burning infested stems
Gooseberry	Mildew	Potassium sulphide, 1 oz. to 2 gal. water	Just as buds burst	Repeat at intervals of 10 days till fruit is picked		
Grape	Mildew and Rot	Bordeaux or dilute Lime-Sulphur	When buds first swell	Repeat in ten days	Repeat in ten days	Fourth application is needed. Use arsenate of lead if flea beetles are present
Peach	Leaf, Curl and Rot	Lime-Sulphur	Just before the buds open	After blossoms fall	Repeat in two weeks	Best to add arsenate of lead for any biting insects
Peach	Mildew	Lime-Sulphur	Before buds burst			
Peach	Peach Tree Borer	Dig out worms in fall and spring with a knife. During growing season whitewash base of trunk.				
Pear	Blister Mite	Sulphur-Lime, 1 gallon to 10	When leaves are off tree			
Pear	Cottony Scale	Kerosene emulsion	When insects become cottony (May)	Add more soap than the formula calls for. Repeat 10 to 12 days later if necessary		
Pear	Scab	Lime-Sulphur, or Bordeaux, with Arsenate of Lead	Just before the blossoms open	While the last blossoms are falling. Use a vermorel nozzle. Do not drench the trees		
Plum	Blight and Curculio	Arsenate of lead, 1 ½ lbs. to 50 gallons water	After blossoms fall	Repeat in ten days	10 days later recommended solution if Aphis is present	If scale insects are present, use lime-sulphur or recommended compound
Raspberry Blackberry and Dewberry	Fungous Diseases	Bordeaux or Lime-Sulphur or Soluble Oils recommended	When buds begin to swell	When leaves are opening. Cut out all rusted canes	Two weeks later (when not in flower) repeat second	Dilute the mixture to half the strength given in formula —100 gallons of water instead of 50.

*Same treatment for Peach. †Same treatment for Plum. ‡Same treatment for Pear. °Same treatment for Cherry.

Number of Trees or Plants for an Acre of Ground, Set at Regular Distances Apart.

Distance Apart.	No. of Plants.
5 inches by 3 inches	696,960
4 inches by 4 inches	392,040
6 inches by 4 inches	174,240
9 inches by 9 inches	77,440
1 foot by 1 foot	43,560
1½ feet by 1½ feet	15,370
2 feet by 1 foot	21,780
2 feet by 2 feet	10,860
2½ feet by 2¼ feet	6,920
3 feet by 1 foot	14,520
3 feet by 2 feet	7,260
3 feet by 3 feet	4,840
3½ feet by 3½ feet	3,555
4 feet by 1 foot	10,899
4 feet by 2 feet	5,445
4 feet by 3 feet	3,630
4 feet by 4 feet	2,722
4½ feet by 4½ feet	2,151
5 feet by 1 foot	8,712
5 feet by 2 feet	4,356
5 feet by 3 feet	2,904
5 feet by 4 feet	2,178

Distance Apart.	No. of Plants.
5 feet by 5 feet	1,742
5½ feet by 5½ feet	1,417
6 feet by 6 feet	1,210
7 feet by 7 feet	881
8 feet by 8 feet	680
10 feet by 10 feet	435
12 feet by 12 feet	302
13 feet by 13 feet	257
14 feet by 14 feet	222
15 feet by 15 feet	193
16 feet by 16 feet	170
17 feet by 17 feet	150
18 feet by 18 feet	134
19 feet by 19 feet	120
25 feet by 25 feet	69
30 feet by 30 feet	48
33 feet by 33 feet	40
40 feet by 40 feet	27
50 feet by 50 feet	17
60 feet by 60 feet	12
65 feet by 66 feet	10

To estimate the number of plants required for an acre at any given distance, multiply the distance between the rows by the distance between the plants, which will give the number of square feet allotted to each plant, and divide the number of square feet in an acre (43,560) by this number and the quotient will be the number of plants required.

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